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Social, demographic, and economic factors affecting school enrollment, retardation, dropout, and college attendance were investigated. Factors affecting the level of educational attainment, including the relation of education to occupation, were also considered.

Procedures involved analysis of statistical data from census materials. Changes in enrollment rates, 1900-60, were studied.

Trends in grade retardation indicate a very substantial decline. Because of compulsory attendance, factors such as educational choice, economic status, and satisfactory school achievement affect only enrollment patterns of late high school and college levels. Factors considered which may affect the educational attainment level are sex, age, race, ethnic groupings, religion, geographic regions, urban vs. rural areas, and socioeconomic level. Educational attainment within the broad occupational categories of the census had increased substantially for most occupations in the last two decades. The data also indicate that there has been a decline in the strength of the relationship between educational attainment and occupation, and that this decline is likely to continue.

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A STUDY OF EDUCATION AND THE SOCIAL STRUCTURE

Cooperative Research Project No. 2065

John K. Folger
and
Charles B. Nam

U. S. DEPARTMENT OF HEALTH, EDUCATION AND WELFARE
Office of Education

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FLORIDA STATE UNIVERSITY
Tallahassee, Florida
1965

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INTRODUCTION

The research reported here is part of a larger study of education of the American people being conducted by the authors. Additional information will be reported in the forthcoming census monograph, Education of the American People, being completed as part of the 1960 monograph series sponsored by the Bureau of the Census and the Social Science Research Council.

In addition to this report, which examines census materials and other sources of information on social and economic factors affecting enrollment and attainment, three publications of the Bureau of the Census report basic educational statistics. These are:

U. S. Bureau of the Census, U. S. Census of Population: 1960 Subject Reports: Educational Attainment, Report PC(2)-5B. Washington: U. S. Government Printing Office, 1963.

U. S. Bureau of the Census, U. S. Census of Population: 1960 Subject Reports: School Enrollment, Report PC(2)-5A. Washington: U. S. Government Printing Office, 1964.

U. S. Bureau of the Census, U. S. Census of Population: 1960 Subject Reports: Characteristics of Teachers. Report PC(2)-7D. Washington: U. S. Government Printing Office, 1964.

The tabulation and publication of each of these reports was made possible in part by funds from this research project; publication of these reports, although not a part of the research itself, represents one of the important contributions of this project to research scholars and educational administrators.

Problems, Research Objectives, and Related Research

This research is concerned with social, demographic, and economic factors affecting school enrollment, retardation, drop-out, and college attendance. It is also concerned with factors affecting the level of educational attainment, including the relation of education to occupation. Since the analysis covers a variety of topics, the hypotheses and related research are discussed for each topic, but some generally related research is indicated below.

Research on the social correlates of school attendance has been fairly extensive. In an earlier analysis of 1950 census materials, Sloan Wayland and Edmund de S. Brunner, "The Educational Characteristics of the American People," Teachers College Bureau of Publications, 1958 (Multilith), devoted some attention to these questions. Other research includes: Eli Ginsberg and D. W. Bray, The Uneducated (New York: Columbia University Press, 1953) and Dael Wolfle, America's Resources of Specialized Talent, (New York: Harper, 1954); National Science Foundation, The Duration of Formal Education *for High Ability Youth.* Washington: National Science Foundation Report 61-36; U. S. Department of Agriculture: *Economic Factors Influencing Educational Attainments and Aspirations of Farm Youth.* Washington: Agricultural Economic Report No. 51, 1964; U. S. Department of Agriculture, *School Dropout Rates Among Farm and Non-farm Youth, 1950 and 1960*, Washington: Agricultural Economic Report No. 42, 1963; U. S. Department of Agriculture, *School Drop-outs and High School Graduates,* 1960. Washington. Agricultural Economic Report No. 65, 1964.

A considerable amount of attention has been devoted to the education income relationship. Among pertinent studies are: Glick and Miller, "Educational Level and Potential Income," *American Sociological Review* (June, 1956); O. D. Duncan, "Occupational Components of Educational Differences in Income," *Journal American Statistical Association*, December, 1961; and T. W. Schultz, "Education and Economic Growth," *Sixtieth Yearbook of the National Society for the Study of Education, 1961*.

Good reviews of current research on the relation of Education to Social Mobility and Social Structure are to be found in O. Brim, *Sociology and the Field of Education*, (New York: Russell Sage, 1958) and in Halsey and Floud, "The Sociology of Education," *Current Sociology VII, No. 3, 1958*. The book by R. J. Havighurst, *American Higher Education in the 1960's*, is of especial pertinence to the research proposed.

Procedures

The research procedures involved straightforward analysis of statistical data. Principal attention was devoted to the census materials, both those from the decennial censuses and sample data from the current population survey. The census materials, as well as the current population survey, are subject to sampling error and to response errors of various kinds. Wherever it seems that these errors might have affected the results or conclusions, this is indicated in the analysis. In addition, some comparisons of census enrollment figures with Office of Education enrollment figures are presented in an appendix.

CHAPTER I

Changes in Enrollment Rates, 1900 - 1960

Enrollment from 1900 to 1960

The dawn of the Twentieth Century found the ideal of universal education firmly established in all parts of the country and the norm of an elementary education well established for most groups in the country. But only a little more than one-half of the youth 5-20 years-old were enrolled in school;[1] the average pupil only attended classes about 100 days a year, and the average teacher had 40 percent more pupils than she does today.

During the period from 1900 to 1940, there was a tremendous expansion of the educational system at the secondary-school level; further increases in enrollment rates at the elementary level; and a steady and rapid growth of college enrollment. By 1940, the educational goals of American citizens had expanded to include a high-school education for everyone, and substantial progress had been made in achieving this goal.[2] In fact, about 79 percent of 14-17 year olds were attending school in 1940--slightly more than youth 10-14 who were enrolled at the turn of the century.

Since 1940, our educational system has continued to develop and, by 1960, the goal of many had become some college (or post-high school education) for everyone although the nation, with 36 percent of its 18-21 year-olds enrolled in school, was still a long way from implementing this goal.[3] With 88 percent of 14-17 year-olds and 98 percent of 7-13 year-olds enrolled in school, universal education through high school was largely accomplished. Public interest in the number of drop-outs from elementary and high school is greater in 1960 than ever before, even though the drop-out rate is far smaller than it has ever been in the past.

Census figures on enrollment by age do not give a very clear picture of the development of the elementary and secondary levels of the American school system. In the early part of the Twentieth Century, many of the persons of high-school age were retarded in school and enrolled in elementary school, rather than high school. As retardation in school has been reduced, the figures by age have come more and more to be equivalent to the enrollment at the various grade-levels of the school system. The figures in Table 1 give estimates of the shifting levels of enrollment by age. With the exception of the 1920 to 1930 decade, there has been a steady decline in the number and percent of elementary pupils above "normal" elementary age and a corresponding decline in number and percent of secondary pupils above "normal" high school age.

Using Office of Education figures on growth of the school system by level, elementary enrollment has expanded about 67 percent between 1910 and 1960--from 18 to 30 million. Three-fourths of the growth (nine million) occurred between 1950 and 1960. If we use census figures on the growth of enrollment of the 5-13 age group, we see that enrollment at this age expanded about 130 percent--from 12.5 to 29 million. Over 10 million of this 16.6 million growth occurred between 1950 and 1960. The major part of the explanation of these two different pictures of enrollment growth is found in Table 1. There were four million elementary pupils over 13 in 1910 and only 700 thousand in 1960. The remainder of the difference appears to be largely due to the differences between census and Office of Education statistics on enrollment.

At the secondary level, there is an even greater difference between the growth of secondary enrollment and the increase in the 14-17 year-old population enrolled in school. Secondary enrollment increased almost nine-fold between 1910 and 1960--from 1.1 million to 9.6 million. In contrast, the enrollment of the 14-17 year-old population slightly more than doubled from 4.2 to 9.8 million, increasing at about the same rate as the enrollment of persons 5-13. In 1910, the 14-17 year-olds enrolled were predominantly elementary pupils; by 1960 they were predominantly secondary pupils. In the census statistics on enrollment by age, the reduction in grade retardation that occurred between 1910 and 1960 masks the tremendous expansion of secondary education almost completely.

Population growth was a major factor in the enrollment increases recorded between 1910 and 1960. For the age group 5-13, almost 70 percent of the enrollment increases was due to population growth; the other 30 percent to increased enrollment rates. For the 14-17 year-olds, population increases accounted for 42 percent of enrollment growth and, for the 18-19 year-olds only 15 percent of enrollment growth can be attributed to population increase. For the entire 5-19 year-old group, slightly more than one-half the increase (55 percent) can be attributed to population growth.

More than one-half the total growth in enrollment in the 1910 to 1960 period occurred between 1950 and 1960, or about 13 out of the 23.6 million increase. About two-thirds of the enrollment growth between 1950 and 1960 can be attributed to population growth. For the period from 1910 to 1950, increased enrollment rates played a somewhat more important part in enrollment increases than did population growth.

The decade-by-decade "output" of the school system at the three major levels is given in Table 2 for each decade since 1900. High-school graduates increased nearly twelve-fold during the six decades of the Twentieth Century, and college graduates increased almost eleven times in the same period. In a fifty-year period, between 1910 and 1960, enrollment in the eighth grade (which is as near a measure of elementary school output as we have) approximately doubled.

From 1900 to 1940, the number of high-school graduates grew slightly more rapidly than did the number of college graduates. The proportion of high-school graduates going on to college probably declined some, too. The war affected the output of the colleges more than it did the high schools but, in the post-war period, the college level replaced the high school as the fastest-growing part of the American educational scene.

Trends in Grade Retardation

The figures cited above, which compared census and Office of Education statistics on enrollment at different levels with census statistics on

Table 1

Estimates of Age-Enrollment Level-Relationships U. S. 1910-60

(figures in 1,000's)

Year	(1) Adjusted* Elementary Enrollment	(2) Estimated Elementary Pupils Over 13	(3) Percent Overage Col. (2)÷ Col. (1)	(4) Adjusted* Secondary Enrollment	(5) Estimated Elementary and Secondary Pupils 18 and Up	(6) Percent Overage Col. (5)÷ Col. (4)
1960	29,859	719	2.4	9,473	398	4.2
1950	20,290	1,171	5.8	6,225	316	5.1
1940	18,827	1,987	10.6	6,559	836	12.7
1930	22,173	3,606	16.3	4,648	1,428	30.7
1920	18,862	3,071	16.3	2,306	608	26.4
1910	16,617	4,065	24.5	1,019	834	81.8

---

*U. S. Office of Education enrollment figures by level; adjusted to sum to total enrollment figures reported in the census. O.E. figures were from 2 to 10 percent higher than census totals. Estimates of overage pupils are made by the residual method, thus they reflect any other errors and inconsistencies that exist in the data as well as overage pupils. Actual numbers may be substantially in error, but the trend and general magnitude of the results are probably reliable.

TABLE 2

Estimated Output of the Educational System Elementary, Secondary, and Collegiate Levels, 1900-1960

(figures in 1,000's)

Decade	(1) Eighth Grade Enrollment	(2) Total High School Graduates	(3) Bachelors & 1st Professional College Graduates	(4) Ratio Of Elementary to H.S. Grads.	(5) Ratio Of High School to College Grads.
1900-09	Not Available	1,151	314	.54	.27
1910-19	12,581	2,278	413	.18	.18
1920-29	16,017	4,817	840	.30	.17
1930-39	18,891	9,364	1,441	.50	.15
1940-49	18,888	11,490	1,946	.61	.17
1950-59	24,763	13,464	3,422	.54	.25

Source: Statistics on eighth grade are for students enrolled, not on graduates. Private school eighth-grade enrollment is estimated and included in totals, estimated to be the same as the ratio of private to public total elementary enrollment during the decade. Statistics from Biennial Survey of Education. Statistics of State School Systems, 1921-22, 1929-30, 1935-36, 1947-48, 1955-56, and 1959 Statistics of State School Systems.

Statistics on High School Graduates and College Graduates taken from: Historical Statistics of the U. S.; Colonial Times to 1957, and from Statistics Of State School Systems and Earned Degrees Conferred, 1959.

enrollment by age, suggest that grade retardation was very substantial in the early part of the Twentieth Century. The census provides no direct evidence on this point prior to 1940, but interest in the amount of grade retardation in the early part of the century led the Office of Education to conduct surveys of the problem periodically. Dr. George Strayer[4] made a survey on December 1, 1908, of 319 cities. He found that 38 percent of boys and 34 percent of girls were over-age in grade. The pattern at that time was for most persons to remain in school for the first four grades, but the number of retarded children built up very rapidly. According to Strayer, nearly one-half the drop-outs occurred between ages 13-15 and, in all the upper elementary grades and the high school, the number of drop-outs increased faster than the number of repeatees.[5]

A similar study was conducted in 1927 by Frank Phillips of the Office of Education.[6] Phillips' study was also limited to urban school systems. As a consequence, both the studies undoubtedly understate the amount of retardation in the nation as a whole. Phillips found that about 25 percent of boys and 20 percent of girls were retarded at age 10 and about 40 percent of boys and 32 percent of girls were retarded at age 15. These two studies indicate that retardation was very substantial in 1908 and in 1927, and they suggest that it did not decline very much during the period.[7]

In 1940, the census provided tabulation of age by grade in which enrolled. Unfortunately, the way the question was asked made the data non-comparable with the information collected in 1950 and 1960.[8] Detailed study of grade retardation with census materials is limited to the 1950 and 1960 censuses but, even in this short period, there have been some dramatic changes in grade retardation.[9] In 1950, about 18 percent of boys and 13 percent of girls were retarded one or more grades by age 10, and about 31 percent of boys and 21 percent of girls were retarded at age 15.

If the Phillips' study cited above provided a reasonable sample of retardation in urban areas in 1927, retardation in urban areas was approximately reduced by one-half between 1927 and 1950.

Between 1950 and 1960, grade retardation in the pre-college years was reduced another 40 percent. Table 3 shows the percent of grade retardation in both 1950 and 1960 at age 15 for selected sub-groups of the population. Fifteen is an age where retardation is near a maximum for the pre-college years. The distribution of the percent retarded by age is similar for most groups, with retardation rising steadily to age 15 or 16 and declining slightly to age 18, where it rises sharply and erratically during the college years. At the college level, "retardation" changes its meaning as a concept because of the large number of part-time students and students who have deferred entry into college. (See Figure 1.)

At the pre-college years, the percent of persons who were seriously retarded (more than one year) was reduced much more rapidly between 1950 and 1960 than the percent who were retarded only one year (53 percent, as compared with 32 percent reduction, respectively). Retardation among non-whites, both male and female, was approximately double the retardation for whites in both 1950 and 1960, and the percentage reduction in retardation during the decade was greater for whites than for non-whites.

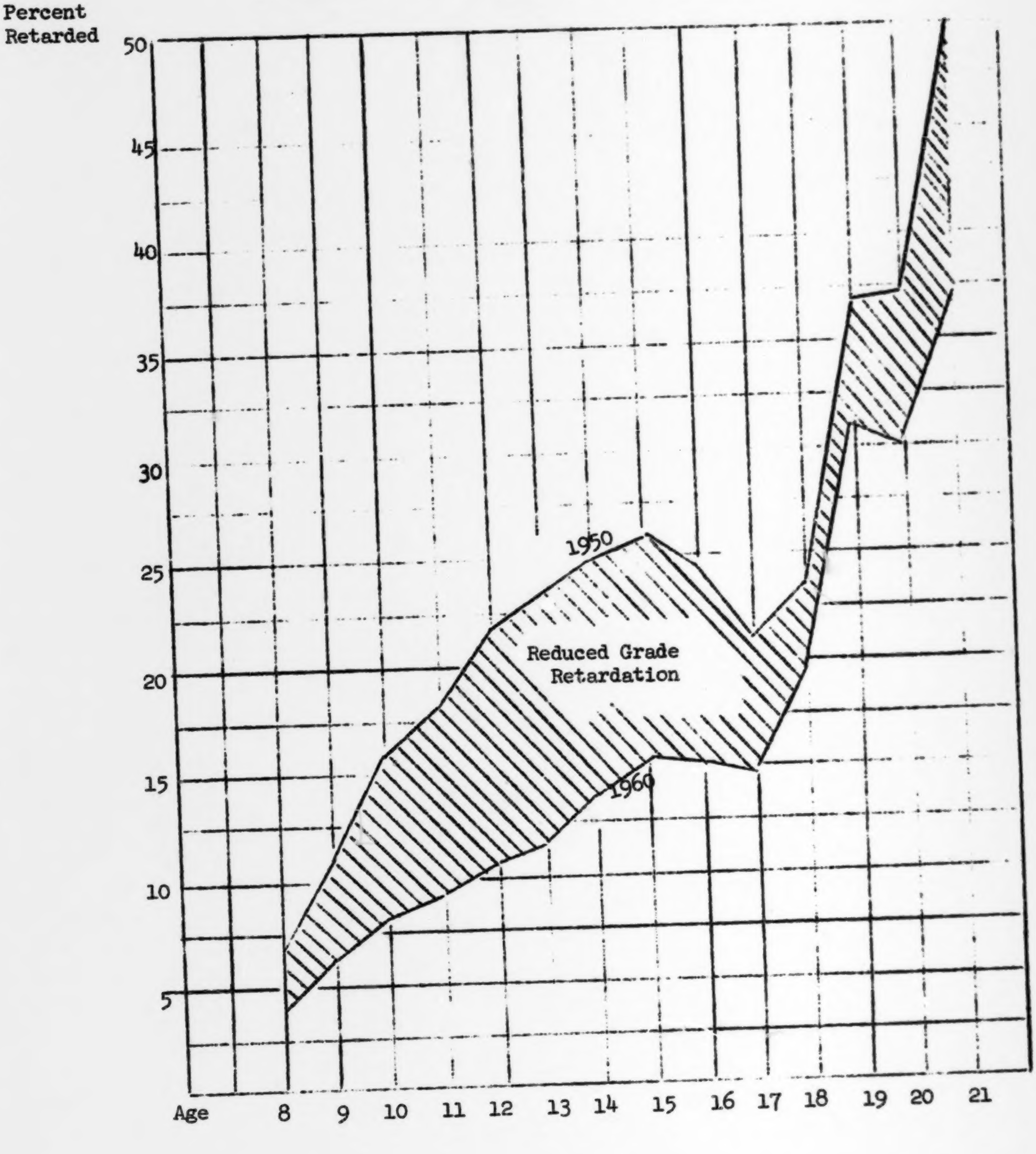
Table 3

Percent Retarded, at Age 15, 1950 and 1960 for the Total Population and Selected Subgroups

Group	1960 Percent Retarded			1950 Percent Retarded			1950-60 Percent of Decrease		
	Total	One Year	More Than One Year	Total	One Year	More Than One Year	Total	One Year	More Than One Year
Total	15.3	9.3	6.0	26.3	13.6	12.7	42	32	53
Total Males	18.8	11.3	7.5	31.3	15.8	15.5	40	28	52
White Males	16.3	10.4	5.9	27.8	15.4	12.4	41	32	52
Non-White Males	36.8	17.7	19.1	59.5	19.0	40.5	38	7	53
Total Females	11.7	7.2	4.5	21.2	11.4	9.8	45	37	54
White Females	9.8	6.3	3.5	17.7	10.4	7.3	45	39	52
Non-White Females	26.0	14.2	11.8	47.1	19.0	28.1	45	25	58
Urban	12.9	8.3	4.6	20.4	11.7	8.7	37	29	47
Rural Non-Farm	20.6	11.9	8.7	31.3	15.9	15.4	34	25	44
Rural Farm	18.3	9.7	8.6	37.0	16.4	20.6	51	41	58
Non-White Urban	24.3	14.3	10.0	39.0	18.6	20.4	38	23	51
Non-White Rural Farm	49.9	19.6	30.3	74.1	13.6	55.5	33	- 5	45

FIGURE 1

GRADE RETARDATION FOR THE TOTAL U.S. POPULATION



While the absolute size of the differentials is declining, the relative size of most differentials was increasing, and the greatest percentage decline in retardation was registered among the groups with the least retardation in 1950. Even though the differentials remained or increased, all groups shared in the very substantial decline in retardation.

It seems unlikely that grade retardation can be reduced much below five to ten percent in the American school system; we are already near this point among girls in urban areas. Future declines in retardation will be confined largely to youth in rural areas and to non-whites. For both these groups, retardation is still substantial. The differentials in retardation will probably be sharply reduced in any future improvements that occur.

CHAPTER II

Factors Affecting School Enrollment

School enrollment rates, retention in school to higher grade levels and graduation, relative scholastic attainment, and college entrance and completion vary for different segments of the population because of numerous social and economic forces which hinder educational development for some groups of individuals and advance it for others. Wolfle divided the factors which determine who continues on in school into two categories, "those which are essentially related to school progress and those which are related, but not in any essential way."[10] In the essential category were four factors: possession of adequate ability of the type which is measured by standardized tests of academic aptitude; record of satisfactory school work; money; and the student's own desire. Among the related but not essential variables were sex, cultural background, geographic location, and ethnic and religious background.

Data from the decennial censuses and periodic sample demographic surveys enable us to examine a good many of these factors.[11] Because of compulsory school attendance laws throughout the United States that require children to enter school by a certain minimum age and to remain in school until they have attained a higher required age, the "essential" factors have only a limited effect on elementary school and early high school enrollments. Neither the student nor his parents can choose to have him stay out of school. Moreover, publicly-supported schools obviate the need for excessive personal expenditures to keep children in school. Furthermore, children who do not perform well may be kept from advancing but are nevertheless kept in school. Only ability among the "essential" factors operates significantly to restrict enrollment at compulsory ages, through the excuse from school of children who are mentally incapable of doing school work. At later high school and college ages, when attendance is voluntary rather than compulsory, the factors of educational choice, economic status, and satisfactory school achievement would seem to have a heightened effect on enrollment patterns. The "related but not essential" factors, particularly geographic location, may have somewhat more effect than "essential" factors at the lower educational levels, but their effect too is probably far more observable at the post-compulsory ages.

In the following pages, our attention will center on how these several factors are related to the early school years, to who stays in elementary and high school and who drops out, to scholastic progress, to who enters college, and to who stays in college and who drops out.

Early School Years

Some Correlates of Enrollment at Age 5

Most children who were five years old at the time of the census (in April) ordinarily would have been expected to be enrolled in kindergarten or the first grade.[12] Because kindergartens are found more frequently in densely populated areas, enrollment rates at age five tend to vary by type of residential area. Table 4 shows that the percent of five-year olds enrolled in kindergarten or elementary school in 1960 was highest in urban areas, being 57 in the central cities of urbanized areas and 55 in the urban fringe, about 42 in urban places of 10,000 or more outside urbanized areas and 40 in urban places of 2,500 to 10,000 people, 35 in rural places of 1,000 to 2,500 population, and as low as 29 in the other rural-nonfarm areas and 24 in farm areas.

Nationwide, more than four-fifths of the enrollment of five year-olds was in kindergartens. This proportion exceeded nine-tenths in urban fringe areas but was only two-thirds in farm regions. The percentage of children age five enrolled in elementary schools was higher in rural than urban areas, generally, and higher in farm areas than most other types of areas, in particular, presumably because children reaching this age in many rural areas do not have the option to attend kindergarten before elementary school. In urban fringe areas, the effect of having the option can be seen clearly: five year-olds in these areas had the smallest percentage in elementary school and the largest percentage in kindergarten.

Ethnic background appears to be an important correlate of enrollment rates at age five. About 69 percent of Japanese and Chinese five year-olds in 1960 and 66 percent of children at that age from the less-populous nonwhite races in the country were enrolled, as compared with percentages of 56 for second-generation white Americans, 53 for foreign-born whites, 45 for third-or-later generation whites, 42 for Negroes, and 32 for Indians. While these differentials were not as great in large urban areas as in other parts of the country, they did persist in all areas and therefore suggest the importance of cultural factors in accounting for unequal school-beginning rates.

Socioeconomic factors also help to explain differences in enrollment rates at age five. Among boys at this age, percentages enrolled varied with both the parents' educational level and family income. For example, if the boy's father (or his mother, if his father was not present) had less than eight years of schooling and the family had less than $3,000 annual income, the chances were 23 out of 100 that the boy was enrolled; if the parent was at least a high-school graduate and the family's income was at least $7,000, the boy's chances of being enrolled were 57 out of 100. Each of these socioeconomic factors exerted an independent effect on enrollment; that is, when either the education or income factor was held constant, variations in the enrollment rate could still be observed by the other factor.

Based on census data, one can only speculate about the way in which socioeconomic factors operate to affect the enrollment rate at age five. Better-educated parents presumably are more likely to place a high value on education and to want their children to start school as early as possible. Parents from the higher economic strata are in a better position than those from the lower strata to carry out their intentions of placing their children in school early, since some want to send their children to costly

TABLE 4

School Enrollment Patterns of 5-Year-Olds, by Residence and Ethnic Status, for the United States: April 1960

Residence and ethnic status	Percent enrolled in school			Percent not enrolled in school
	Total	Kindergarten	Elementary School	
United States	44.8	38.1	6.8	55.2
RESIDENCE				
Urban	52.4	45.9	6.5	47.6
Urbanized areas	56.0	49.2	6.8	44.0
Central cities	56.9	48.4	8.5	43.1
Urban fringe	55.0	50.2	4.6	45.0
Other urban	40.8	35.2	5.6	59.2
Places of 10,000 or more	41.6	36.4	5.2	58.4
Places of 2,500 to 10,000	39.9	33.7	6.1	60.1
Rural	28.8	21.5	7.3	71.2
Places of 1,000 to 2,500	35.3	29.4	5.9	64.7
Other rural	28.0	20.5	7.5	72.0
Nonfarm	29.4	22.1	7.3	70.6
Farm	24.1	16.1	8.0	75.9
ETHNIC STATUS				
White	45.2	39.4	5.7	54.8
Native white	45.1	39.4	5.7	54.9
Native parentage	44.5	38.9	5.7	55.5
Foreign or mixed parentage	55.8	48.9	6.8	44.2
Foreign-born white	52.7	45.9	6.8	47.3
Nonwhite	42.7	29.7	13.0	57.3
Negro	41.8	28.4	13.4	58.2
Indian	32.3	21.0	11.3	67.7
Japanese and Chinese	68.9	61.3	7.6	31.1
Other races	65.6	58.3	7.3	34.4

Source: 1960 Census, Vol. II, Part 5A, tables 1 and 2.

private schools and those content to send their children to public school must face certain costs, if nothing more than those related to having the children reasonably well-dressed and well-groomed when they go to school.

Some correlates of enrollment at ages 6 to 9

The vast majority of school children who were six years old at the census data were in the first grade, but a small percentage were in a higher grade and a slightly larger percentage were in kindergarten. The pattern of urban-rural differences noted for five year-olds held fairly well for six year-olds, primarily because residential differences in the availability of kindergartens was still an important factor (Table 5). Likewise, ethnic and socioeconomic factors remained operative. Though enrollment rates at age six were approaching the maximum rates held by slightly older children, some of the children were not yet covered by the compulsory attendance laws and there was room for variation in enrollment rates among population classes.

By ages seven to nine, nearly all children were in school and there was little opportunity for enrollment rates to vary. About 98 percent of the eight-year olds were in school in April 1960, and the same percent was recorded for every ethnic group except Negroes, for whom the enrollment rate was 96 percent, and American Indians, for whom it was 93 percent. Similarly, very little distinction in enrollment rates for socioeconomic groups was found. Among children in the seven-to-nine age group, the percent in school ranged from 95 for those whose parents lacked an eighth-grade education and whose family had less than $3,000 annual income to 99 percent for those with a high-school-graduate parent and $7,000 or more family income.

WHO STAYS IN SCHOOL AND WHO DROPS OUT?

The person who fails to complete high school today is commonly regarded as unable to meet the demands of a technological society and even unequipped to satisfy his own needs. The high school dropout, it is said, is at a disadvantage relative to the graduate in that he has a more difficult time getting a job, learns new skills more slowly, does not benefit as much from his leisure, is not as well-prepared to be a citizen, and makes less money.[13] Moreover, the disadvantage the dropout now faces is a growing one; the situation, it is believed, will worsen before it gets better.[14] A number of explanations have been offered as causes of students leaving school: they are from low-income families and there is an economic need or they have been lured by a job; they are discouraged with their work because they are failing or have previously been left back one or more grades; they are dissatisfied with the school or with teaching methods; they have a feeling of "not belonging;" or personal or family difficulties have left them physically or psychologically unfit to pursue their studies.[15]

Data from the census and population sample surveys do not provide information about many of these topics, but they do reveal much about the distinguishing traits of the dropouts and those who stay in school to graduation--their personal and family characteristics and their economic status after leaving school. While census data do not comprehend a variety of important influences on the school progress of children and youth, and

TABLE 5

School Enrollment Patterns of 6-Year-Olds, by Residence and Ethnic Status, for the United States: April 1960

Residence and ethnic status	Percent enrolled in school				Percent not enrolled in school
	Total	Kindergarten	First Grade	Higher Grade	
United States	83.4	16.7	60.6	6.1	16.6
RESIDENCE					
Urban	87.2	19.4	61.3	6.5	12.8
Urbanized areas	88.7	19.6	62.2	7.0	11.3
Central cities	87.7	17.2	62.0	8.5	12.3
Urban fringe	90.0	22.5	62.4	5.1	10.0
Other urban	82.2	19.0	58.4	4.8	17.8
Places of 10,000 or more	82.4	19.7	57.8	4.9	17.6
Places of 2,500 to 10,000	82.0	18.1	59.2	4.7	18.0
Rural	75.4	11.0	59.1	5.3	24.6
Places of 1,000 to 2,500	80.2	15.4	60.2	4.6	19.8
Other rural	74.8	10.4	59.0	5.4	25.2
Nonfarm	75.6	10.8	59.5	5.2	24.4
Farm	72.6	9.3	57.6	5.7	27.4
ETHNIC STATUS					
White	84.1	17.7	61.1	5.2	15.9
Native white	84.0	17.7	61.1	5.2	16.0
Native parentage	83.8	17.6	61.1	5.1	16.2
Foreign or mixed parentage	88.1	19.0	62.4	6.7	11.9
Foreign-born white	85.6	19.7	59.9	6.0	14.4
Nonwhite	79.1	10.4	57.3	11.4	20.9
Negro	78.6	9.8	57.1	11.7	21.4
Indian	72.3	14.6	49.3	8.4	27.7
Japanese and Chinese	94.4	17.8	69.0	7.6	5.6
Other races	91.5	21.4	63.7	6.4	8.5

Source: 1960 Census, Vol. II, Part 5A, tables 1 and 2.

fail to lead us to some of the effective causes of school attrition, they serve the purpose of identifying those groups within the population whose schooling is most deficient and for whom more intensive research into causes of educational deficiency may be made.

Selection in School Retention--At Selected Ages

By age 10, the physically and mentally capable child is virtually certain to be in school, but from that age on the enrollment rate declines, more rapidly as the later teen ages are reached. What are the patterns of social selection in school retention at these ages and do these patterns change with age? The statistics we shall examine are principally for three age groups--10 to 13, 14 and 15, and 16 and 17. The first set of ages is well within the compulsory age range and 98 percent of this age group was in school in 1960. Scholastic attrition has begun to lessen the enrollment rate by ages 14 and 15, 94 percent of whom were in school in 1960. By ages 16 and 17, many youths are no longer subject to the compulsory attendance laws for their state and dropping out of school is much less restrictive than at earlier ages; 81 percent of this group was in school in 1960.

Little ethnic variation in enrollment rates can be observed at ages 10 to 13 (Table 6). Foreign-born white children were slightly less likely than the average child at these ages to be in school and the percent enrolled for Negro children was two percentage points below, and that for Indian children four percentage points below, the percent for all children 10 to 13 years old. At ages 14 and 15, ethnic differentials were slightly wider. The enrollment rate for Japanese and Chinese children was a few percentage points higher than the national average while the rates for Negro and Indian children were several points lower. The percentage for native white children of native parentage and children of other minor non-white races was slightly higher, and for foreign-born white children slightly lower, than the average. Among youths 16 and 17 years olds, differentials became sharper. Japanese and Chinese youths were now 13 percentage points above the average for the age and the 16 and 17 year-olds of native-born parents were eight points higher. Second-generation white youths had a slightly better than average chance of being enrolled, while the foreign-born whites were now three points below, Negro youths eight points below, and Indian youths 11 points below, the national average.

Between 1950 and 1960, enrollment rates increased for all ethnic groups, but particularly for those groups whose rates were lowest in 1950. At ages 10 to 13, for example, the percent enrolled for Japanese increased from 96 to 98, for Indian children it went from 81 to 93, and for foreign-born white children it rose from 92 to 97. Thus, by 1960 enrollment differentials by ethnic status had narrowed considerably.

A child's family status is an important influence on his enrollment expectancy. The 1960 Census showed that enrollment rates, especially at ages 16 and 17, were somewhat lower for children from broken families (those disrupted by the loss of a parent from the household through death or a broken marriage) than for those still living with both parents. Furthermore, among children living with both parents, enrollment rates tended to be lower where the mother was the breadwinner or neither parent was in the labor force than where the father was in the labor force. Where the child was

TABLE 6

Percent Enrolled in School at Selected Ages, by Ethnic Status, for the United States: April 1960

Ethnic status	Percent enrolled in school		
	10 to 13 years old	14 and 15 years old	16 and 17 years old
United States	97.5	94.0	81.0
White	97.7	94.6	88.6
Native white	97.8	94.6	88.5
Native parentage	97.8	94.6	88.9
Foreign or mixed parentage	97.4	94.3	82.3
Foreign-born white	96.5	93.3	77.5
Nonwhite	95.9	90.2	73.8
Negro	95.9	90.0	73.1
Indian	93.4	88.7	69.9
Japanese and Chinese	97.7	97.3	93.7
Other races	97.2	95.2	81.4

Source: 1960 Census, Vol. II, Part 5A, table 1.

living with only one parent, he was slightly less apt to be enrolled if his parent was not in the labor force. The socioeconomic factor seemed to be vital, and this is substantiated by data which show that having a working mother or neither parent at work depressed the enrollment rate of boys more than of girls. Where there is an economic need in the family, it is the practice for boys more often than girls to help the family earn a living.

Among youths 16 and 17 years-old not living with either parent, the enrollment rate was considerably lower than average. This was particularly true of girls, many of whom had gotten married and gone to work. Table 7, which shows the family status of high school drop-outs (those not in school who did not finish high school[16]) in the 16 and 17 year age group, bears this out. Girls were exceedingly more likely than boys to have established their own families by this age, and about one-half of the married female drop-outs already had children of their own. Boys who had dropped out of school were more likely than girls to be living alone or with nonrelatives. Of the drop-outs of both sexes living with their parents or other relatives, about one-fifth were in homes that had been affected by broken marriages. About one in twenty male drop-outs and a smaller proportion of female drop-outs were in institutions of one kind or another, many of them in penal or corrective institutions.

The value of education for children may be appreciated more where the parents have been well-educated themselves. Census data confirm the fact that the higher the parents' educational attainment, the higher the enrollment rates of their children (Table 8).[17] Moreover, the education of both parents seems to be important in accounting for higher enrollment percentages. Even for a fixed level of father's education, for example, enrollment rates varied by the mother's educational level.

At ages 10 to 13, whether the parents finished grade school or went to college had only a modest effect on the uniformly higher percentages enrolled. Where both parents lacked an eighth-grade education, 95 percent of the boys and girls at these ages were in school. By ages 14 and 15, as the overall drop-out rate increased, the selective effect of parents' education became more noticeable. About 88 percent of the children at these ages with parents who failed to complete the eighth grade, and 99 percent of those whose mother and father had some college were enrolled in school. For each higher level of father's education, and for each higher level of mother's education above that of the father's, a small increment was added to the enrollment rate of the children. Enrollment differentials by parents' education were considerably wider at ages 16 and 17. Boys at these ages whose fathers had less than eight years of schooling had 73 chances in 100 of being enrolled, while those whose fathers had gone to college had 96 chances in 100 of being in school. If the mother as well as the father had less than eight years of school, the chances were reduced to 66 in 100; if the mother as well as the father had some college, they were increased to 97 in 100.

This pattern of enrollment by parents' educational level for the different ages of children and youth was about the same whether the child was a boy or girl, white or nonwhite, and from an urban or rural area. A few minor

TABLE 7

Family Status of High School Dropouts 16 and 17 Years Old, by Sex and Color, for the United States: April 1960

Family status	Total		Nonwhite	
	Male	Female	Male	Female
Total	100.0	100.0	100.0	100.0
Family head or wife of head	3.2	35.6	2.5	28.3
Married, living with spouse	3.0	32.7	2.1	22.4
Has children	1.1	16.1	1.2	14.3
Does not have children	1.9	16.6	0.9	8.1
Other marital status	0.2	2.9	0.4	5.9
Family member other than head or wife	82.4	60.0	86.4	67.0
Head is single	0.7	0.7	2.3	1.8
Head is married	66.6	48.1	58.1	44.6
Head is widowed or divorced	15.1	11.3	26.0	20.6
Living alone or with nonrelatives	10.4	2.6	5.0	3.1
Institutional inmate	4.0	1.8	6.1	1.5

Source: 1960 Census, Vol. II, Part 5A, table 14.

TABLE 8

Percent Enrolled in School at Selected Ages, by Sex and Educational Level of Mother and Father, for Children Living With Both Parents, for the United States: April 1960

Years of school completed by mother and father	Male-percent enrolled in school			Female-percent enrolled in school		
	10 to 13 years old	14 or 15 years old	16 or 17 years old	10 to 13 years old	14 or 15 years old	16 or 17 years old
Total........................	97.8	95.1	85.3	97.9	95.3	87.2
Father had less than 8 years......	96.3	90.8	72.7	96.5	90.9	77.7
Mother had less than 8 years....	95.1	87.9	66.1	95.5	88.0	71.9
Mother had 8 or more years......	97.3	93.9	79.5	97.4	93.9	83.4
Father had 8 to 11 years..........	97.8	95.5	85.2	98.0	95.6	86.9
Mother had less than 8 years....	96.4	92.1	76.1	97.0	92.4	79.1
Mother had 8 to 11 years........	97.7	95.2	83.7	97.9	95.5	85.8
Mother had 12 years or some college......................	98.2	97.0	91.1	98.4	97.0	91.4
Father had 12 years...............	98.4	97.1	92.1	98.3	97.3	91.9
Mother had less than 12 years...	98.1	96.1	88.8	97.9	96.4	89.0
Mother had 12 years..............	98.5	97.4	93.4	98.5	97.6	92.9
Mother had some college.........	98.7	98.1	95.6	98.9	98.2	95.4
Father had some college...........	98.8	98.2	95.7	98.8	98.3	95.1
Mother had less than college....	98.6	97.8	94.4	98.7	97.8	93.8
Mother had some college.........	99.1	98.5	97.2	98.9	98.9	96.7

Source: 1960 Census, Vol. II, Part 5A, table 4.

exceptions can be noted. At ages 16 and 17, where the parents were not high school graduates, girls were somewhat more likely than boys to be enrolled, but the difference was still small. At the same ages, nonwhite boys and girls were less likely than their white counterparts to be enrolled, especially where the parents had completed high school, but the color differential even here was small compared to the differential by parents' educational attainment. The enrollment rate for rural-farm boys 16 and 17 years old whose parents both lacked an eighth-grade education (62 percent) was somewhat less than the rate for boys with the same educational background in urban fringe areas (71 percent), but this differential by residence was considerably narrower where the parents were better educated.

What do we find when we introduce an index of economic status to the relationship between parent's education and school enrollment of young persons? From the data in Table 9, we can see that, for given levels of parental education, the higher the family income the higher the enrollment rate of children and youth.[18] The effect of family income was most pronounced where the parent had attained a low level of schooling. For example, among 14 and 15 year-old girls, the percent enrolled in school ranged from 88 in the lowest income category to 93 in the highest category where the parent lacked an eighth-grade education and from 96 in the lowest income category to 98 in the highest category where the parent was at least a high-school graduate. Similarly, among 16 and 17 year-old boys, enrollment rates by family income varied from 66 to 77 percent for youths whose parents had not finished the eighth grade and from 90 to 94 percent for those whose parents had completed high school. Overall, both the parental educational level and family income affected a child's chances of being in school, particularly at ages 16 and 17, with the effect of parental educational level being a little bit stronger (Figure 2).

The general relationship between parents' education, family income, and school enrollment was found in 1960 for each sex, color, and residence group, with little variation. Among the notable exceptions were the slightly more favorable enrollment rate of girls than boys 16 and 17 years old whose parents were poorly educated, the somewhat lower enrollment rate of nonwhite than white boys and girls in the same age group whose parents were moderately-to-well educated, and the slightly higher enrollment rates for farm than urban boys and girls in the 16-to-17 age bracket whose families had low income. These exceptions, however, were minor when examined in the context of the larger configuration relating the several variables.

Whether an enrolled youth 16 or 17 years old was in a public or nonpublic (parochial or other private) school also varied according to his socioeconomic background. Only two percent of the male youths in school at these ages whose parents had less than eight years of school and less than $3,000 annual income were attending a nonpublic school, compared to 15 percent of those whose parents were high-school graduates and had $7,000 or more income a year. Here, the income factor proved statistically more important. Even among enrolled boys whose parents did not have as much as an eighth-grade education, 10 percent whose families had at least $7,000 income were attending nonpublic schools.

Table 9

Percent Enrolled in School at Selected Ages, by Sex, Education of Parent, and Family Income, for Children Living with One or Both Parents, for the United States: April 1960

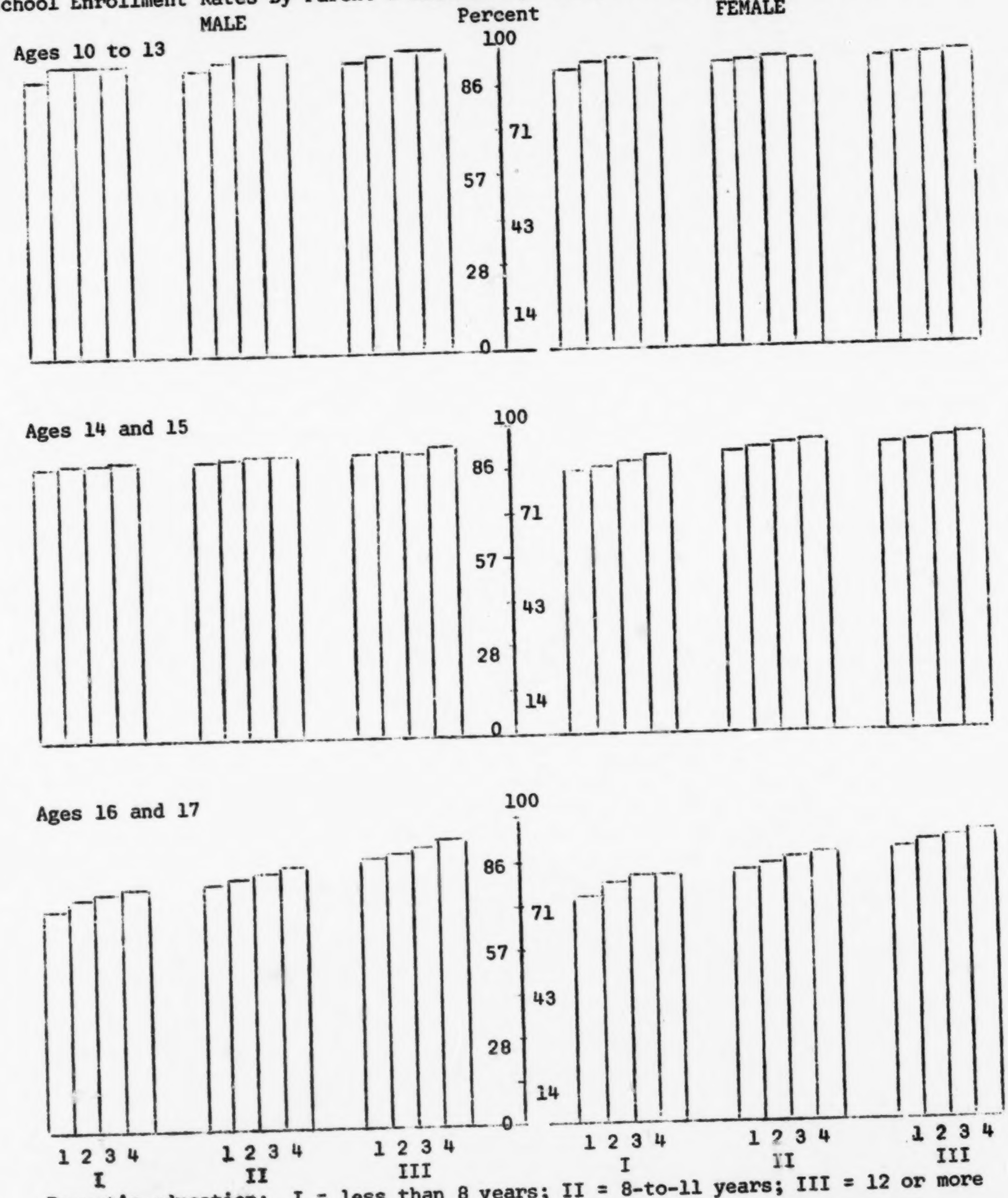
(Education of parent refers to father's education when child was living with both parents or father, and to mother's education when child's father was not living with the household.)

Years of school completed by parent and family income in 1959	Male - percent enrolled in school			Female - percent enrolled in school		
	10 to 13 years old	14 or 15 years old	16 or 17 years old	10 to 13 years old	14 or 15 years old	16 or 17 years old
Total..................	97.7	94.8	84.2	97.8	94.9	86.1
Less than 8 years................	96.1	90.3	71.5	96.4	90.5	76.1
Under $3,000.................	94.9	87.1	66.1	95.3	87.9	72.3
$3,000 to $4,999.............	96.6	91.0	71.3	96.8	91.4	77.2
$5,000 to $6,999.............	97.1	93.1	75.5	97.2	92.9	79.0
$7,000 and over..............	97.1	93.6	77.1	97.3	92.6	78.7
8 to 11 years....................	97.6	95.1	84.0	97.8	95.2	85.8
Under $3,000.................	96.8	93.0	78.6	96.9	93.1	82.5
$3,000 to $4,999.............	97.5	94.5	82.9	97.8	94.8	84.9
$5,000 to $6,999.............	98.0	95.8	84.9	98.1	95.5	86.6
$7,000 and over..............	97.9	96.0	86.5	97.9	96.2	87.0
12 years or some college.........	98.5	97.4	93.1	98.5	97.6	92.8
Under $3,000.................	97.9	96.1	89.5	97.9	96.1	90.2
$3,000 to $4,999.............	98.1	97.3	90.7	98.0	96.8	91.2
$5,000 to $6,999.............	98.3	97.1	92.1	98.3	97.4	91.9
$7,000 and over..............	98.8	97.7	94.2	98.7	97.9	93.7

Source: 1960 Census, Vol. II, Part 5A, table 5.

FIGURE 2

School Enrollment Rates by Parent's Education, Family Income, Age, and Sex, 1960



Parent's education: I = less than 8 years; II = 8-to-11 years; III = 12 or more years.

Family income: 1 = Under $3,000; 2 = $3,000-4,999; 3 = $5,000-6,999; 4 = $7,000 and over.

One other socioeconomic indicator for which census enrollment data by age is available is the occupation of the child's father. Findings from analysis of the figures in Table 10 show substantial similarity to those obtained when parents' educational attainment and family income by enrollment of children were analyzed.[19] Only small occupational differences, favoring children of white collar workers, were found at ages 10 to 13. At the older school ages, the percent enrolled in school was significantly lower than average for children of farm laborers and also substantially less than average for children of blue collar workers and farmers. Among 16 and 17 year-old boys, 95 percent of those whose fathers were professionals were in school, as compared with 90 percent of sons of clerical workers, 84 percent of the sons of farmers, 82 percent of the sons of operatives, 77 percent of the sons of nonfarm laborers, and 64 percent of the sons of farm laborers.

The pattern of enrollment by father's occupation differed for girls from boys only in that, at ages 16 and 17, the daughters of men in farm occupations were more likely than sons of farmers and farm laborers to have stayed in school. The pattern for nonwhites differed from that for whites primarily in that, among 16 and 17 year-old boys who were sons of professional workers, relatively more nonwhites than whites were no longer in school. The pattern by residence varied only in that there was a slightly greater tendency in rural than urban areas for children of farm laborers to be out of school. This difference was possibly due to the better economic status of the families of the urban than rural children.

In general, it can be said that socioeconomic factors are important determinants of enrollment differences, particularly at post-compulsory school ages. Their effect clearly overshadows that of population compositional factors, such as differences by sex, color, and type of residence. It would seem, therefore, that a good part of the enrollment rate differentials observed between whites and nonwhites and urban and rural populations can be ascribed to socioeconomic differences among these groups rather than to other factors which characterize the groups themselves.

Selection in School Retention--to High School Graduation

Although a student's progression in school each year is closely related to his age, the correspondence of age and school grade, as indicated in the previous chapter, is far from perfect. The age at which children begin school varies somewhat and some children are not promoted regularly or are kept out of school temporarily for reasons of health or truancy, thereby delaying or minimizing their chances of obtaining diplomas. From the point of view of knowledge gained through formal schooling, to what age a youngster continues in school is not nearly so important as how far he advances in the school system. With the great emphasis today being put on getting a high-school diploma, we are particularly interested in knowing what differentiates the high-school drop-out from the child who stays in school to high-school graduation.

Table 11 provides some measures of school retention by school level for various ethnic groupings in the United States. The data are for men and women 20 to 24 years-old who ordinarily would have been able to finish their

Table 10

Percent Enrolled in School at Selected Ages, by Sex and Father's Occupation, for Children Living with an Employed Father, for the United States: April 1960

Occupation of employed father	Male - percent enrolled in school			Female - percent enrolled in school		
	10 to 13 years old	14 or 15 years old	16 or 17 years old	10 to 13 years old	14 or 15 years old	16 or 17 years old
Total[1]................	97.9	95.4	86.0	98.0	95.6	87.6
Professional, tech., or kindred worker..............	98.7	98.0	95.4	98.8	98.2	95.1
Farmer or farm manager........	97.6	94.0	83.7	97.9	94.8	89.0
Manager, official, or proprietor, exc. farm.......	98.7	97.5	92.9	98.6	97.6	92.9
Clerical or kindred worker....	98.1	96.4	90.2	97.9	96.8	89.8
Sales worker.................	98.4	97.0	92.0	98.4	97.6	92.6
Craftsman, foreman, or kindred worker..............	98.1	96.1	86.4	98.1	96.1	87.6
Operative or kindred worker...	97.6	94.6	81.7	97.7	94.3	83.6
Service worker................	97.7	95.2	84.8	97.6	94.4	84.9
Farm laborer or foreman.......	95.6	86.1	64.3	95.8	87.6	73.9
Laborer, except farm and mine.	96.7	91.7	76.7	97.1	92.4	79.6

[1] Includes persons whose fathers' occupation was not reported, not included in the distribution by occupation.

Source: 1960 Census, Vol. II, Part 5A, table 7.

Table 11

Selected Measures of School Retention for Persons 20 to 24 Years Old, by Sex and Ethnic Status, for the United States: April 1960

Ethnic Status	Percent of those finishing 5th grade who completed some high school		Percent of those completing some high school who graduated	
	Male	Female	Male	Female
United States	86	90	74	74
Native white of native parentage	88	91	75	75
Native of foreign or mixed parentage	91	94	78	81
Foreign born	76	77	76	71
White persons of Spanish surname[1]	62	62	59	58
Puerto Rican stock	61	63	41	47
Negro	75	81	53	56
American Indian	67	69	50	49
Japanese	97	96	88	87
Chinese	93	93	85	85

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[1] In five Southwestern States; largely persons of Mexican origin.

Source: 1960 Census, Vol. II, Part 5B, table 1; Part 1B, table 7; Part 1D, table 6; Part 1C, tables 19, 20, 21, and 22.

secondary schooling during the late 1950's. Some startling differences in retention can be observed. Among those who had survived to complete the fifth grade (in the immediate post-World War II period), less than two-thirds of the Puerto Rican stock and persons of Mexican origin had continued in school to at least the ninth grade. The corresponding proportion was about two-thirds for Indians, roughly three-fourths for Negroes and foreign-born whites, and nine-tenths or more for native whites and persons of Oriental background.[20]

The ethnic factor in school retention became even more selective with advances in school level. Only 41 percent of young Puerto Rican males and 47 percent of the females who completed the ninth grade went on to graduate. For Indians in the same age group, it was about 50 percent, and for Negroes and persons of Mexican origin it ranged between 50 and 60 percent. The high drop-out rate of Puerto Ricans, as compared with Negroes, is all the more remarkable when one considers that the former group is concentrated in urban centers while the latter group includes a high proportion of rural residents. On the other hand, one-fourth of the Puerto Ricans were living in Puerto Rico five years before the census was taken and presumably passed through the school ages there rather than in the United States. The high-school graduation rate for persons 20 to 24 years old who completed some high school was about 70 to 80 percent for native and foreign-born whites and 80 to 90 percent for Japanese and Chinese.

One trait that a student is expected to have in order for him to persist in school at least to high-school graduation is the mental ability to carry out the school work necessary to earn him promotions to each higher grade. The fact of the matter is that, until the compulsory school ages are passed, children tend to be kept in school regardless of their ability. In many cases, students are required to repeat grades in which they have done unsatisfactory work, but they still remain in school. Estimates from a sample survey conducted in 1959-60 showed that children with below-average IQ's were more likely to be school drop-outs than those with above-average IQ's, but a considerable proportion of the less intelligent children continued on in school. About two percent of the potential number of high-school seniors in 1959 who were in the top one-half of the distribution of measured intelligence, but 39 percent of those in the bottom one-half of the distribution, failed to reach the senior year of high school; conversely, about 61 percent of those with below-average IQ's had continued in school to the senior year (Table 12).

The percentage of high-school seniors who did not graduate was also selective of ability. Only five percent of the seniors in the top quartile of the IQ distribution failed to graduate, but about 20 percent in the lowest quartile did not finish the senior year.[21] When the seniors were classified according to their scholastic standing in the class, a similar pattern emerged: three percent in the top quarter scholastically did not graduate, as compared with 20 percent in the lowest quarter.

Dropping out of school before high-school graduation is more characteristic of youths from low-status than high-status families, although drop-outs can be found at all levels of the social scale. The 1959 sample

TABLE 12

Selected Measures of School Attrition, by IQ, for the United States: 1959-60

Intelligence quotient (IQ)	Percentage of potential seniors who did not reach senior year of high school[1]	Percentage of high school seniors who did not graduate
Top quartile....................	1.7	5.3
Second quartile.................		6.5
Third quartile..................	39.2	12.0
Bottom quartile.................		20.1

[1] Derived by subtracting the estimated number of high school seniors in each category from the estimated number of 17-year-olds in each category. Not all of the high school seniors were 17 years old at the survey date; however, three-fifths were 17 years old, one-fifth were below that age, and one-fifth were above that age, so that little bias should be introduced by this procedure. It was assumed that half of the 17 year olds were in the top half of the normal IQ distribution and that half of them were in the bottom half of the distribution.

Source: Bureau of the Census and Economic Research Service, Dept. of Agriculture, Series Census-ERS (P-27), No. 32, tables 1 and 4.

survey showed that about 41 percent of potential high-school seniors from families with incomes of less than $3,000 did not reach the senior year, as compared with 10 to 15 percent from families in higher income categories (Table 13). The percentage of drop-outs or failures in the senior year of high school was about 16 to 19 percent for youths whose families had $4,000 or more income, but six to 9 percent for those whose families were in the lower income bracket. Likewise, a higher proportion of seniors from households in which the head was either a manual or service worker or was unemployed or not in the labor force failed to complete the last year of high school than did seniors from white-collar or farm households.

These findings based on national data are quite consistent with those of other studies which were limited to specific areas of the country or to individual schools.[22] Less consistent are the reports of underlying factors which make dropping out of school more likely for low-status youths. Some studies have identified low job aspirations and low value placed on schooling, typical of lower-class families, as important mechanisms leading to school attrition. Other studies point to the direct economic need of the family and the necessity for another full-time worker in the family to increase its earnings.[23] Still other studies suggest the explanatory significance of the low-status adolescent's disregard of and disdain for authority and education, the expectation of his status group that he will "grow up and get a job," and his inability to comprehend the middle-class values and goals which he finds increasingly imbedded in the educational process as he advances in the school system.[24] Finally, to what extent lower levels of ability, the poorer educational background of parents, and other such factors which tend to be correlated with low economic position, help account for the inverse association between social status and dropping out of school has not yet been adequately determined.

Some Economic Consequences of Dropping Out of School

Is it really true that the recent school dropout is much poorer off economically than his counterpart who has just graduated from high school? A substantial amount of information is available to answer this question. These data substantiate the popular notion that schooling "pays off."

As shown in Table 14, the market position of high school dropouts in 1960 was clearly unfavorable in comparison with the position of high-school graduates of the same ages. Among male youths 16 and 17 years old, about the same proportion of dropouts and graduates were in the labor force (that is, either working or looking for work), but the unemployment rate was virtually twice as high for drop-outs. At ages 18 and 19, the labor force activity of boys, both dropouts and graduates, had risen considerably but the drop-out was more likely not to be in the labor force at all. About 91 percent of the graduates and 82 percent of the drop-outs at that time were either at work or looking for work. Comparative unemployment rates were hardly different than at earlier ages; 17 out of 100 high-school dropouts and nine out of one hundred high-school graduates who were in the labor force could not find work. Moreover, the graduates were more apt to be in the armed forces, presumably because the drop-outs were less able to pass the qualifying tests.

TABLE 13

Selected Measures of School Attrition, by Family Income, for the United States: 1959-60

Family Income in 1959	Percentage of potential seniors who did not reach senior year of high school[1]	Percentage of high school seniors who did not graduate
Under $3,000....................	41.4	-
Under $4,000............	-	15.6
$3,000 to $4,999...............	9.9	-
$4,000 to $5,999........	-	18.7
$5,000 and over................	14.9	-
$6,000 to $9,999........	-	6.4
$10,000 and over........	-	8.9

[1] See footnote 1 on Table 12

Source: Bureau of the Census and Economic Research Service, Dept. of Agriculture, Series Census-ERS (P-27), No. 32, tables 1 and 3.

TABLE 14

Employment Status of Persons 16 to 19 Years Old, by Enrollment Status, High School Graduation Status, Age, Sex, and Color, for the United States: April 1960

Employment status, sex, and color	16 and 17 Years Old			18 and 19 Years Old		
		Not enrolled in school			Not enrolled in school	
	Enrolled in school	High school graduate	Not a high school graduate	Enrolled in school	High school graduate	Not a high school graduate
ALL MALES						
Total........	100.0	100.0	100.0	100.0	100.0	100.0
In labor force..........	31.0	61.9	61.4	43.7	91.0	81.8
Armed Forces..........	0.2	6.8	7.9	1.7	23.7	14.4
Civilian labor force..	30.8	55.1	53.5	41.9	67.3	67.4
Employed............	28.0	49.9	42.6	38.4	61.0	56.1
White-collar worker..........	8.0	16.5	5.0	12.8	18.9	6.0
Blue-collar worker..........	15.6	28.8	27.2	21.9	36.8	41.1
Farm worker.......	4.4	4.6	10.4	3.7	5.3	9.0
Unemployed..........	2.8	5.2	10.9	3.6	6.3	11.3
Unemployment rate.	(9.1)	(9.4)	(20.4)	(8.6)	(9.4)	(16.8)
Not in labor force......	69.0	38.1	38.6	56.3	9.0	18.2
NONWHITE MALES						
Total.......	100.0	100.0	100.0	100.0	100.0	100.0
In labor force...........	19.0	57.9	55.1	34.0	81.0	72.5
Armed Forces...........	0.1	4.8	2.1	1.1	17.4	4.7
Civilian labor force...	18.9	53.1	53.0	32.9	63.6	67.8
Employed.............	16.4	42.4	42.2	28.8	53.9	55.5
White-collar worker	2.4	9.8	1.5	4.1	9.0	3.1
Blue-collar worker.	9.8	29.8	24.7	19.8	41.0	38.5
Farm worker........	4.2	2.8	16.0	4.9	3.9	13.9
Unemployed...........	2.5	10.7	10.8	4.1	9.7	12.3
Unemployment rate..	(13.2)	(20.2)	(20.4)	(12.5)	(15.3)	(18.1)
Not in labor force.......	81.0	42.1	44.9	66.0	19.0	27.5

TABLE 14--(Continued)

Employment status, sex, and color	16 and 17 Years Old			18 and 19 Years Old		
		Not enrolled in school			Not enrolled in school	
	Enrolled in school	High School graduate	Not a high school graduate	Enrolled in school	High school graduate	Not a high school graduate
ALL FEMALES						
Total.........	100.0	100.0	100.0	100.0	100.0	100.0
In labor force...........	18.1	47.7	28.8	31.7	69.5	35.7
Employed...............	16.4	43.7	23.1	29.4	64.5	29.5
White-collar worker..	8.8	33.9	6.6	20.4	52.3	8.7
Blue-collar worker...	7.1	9.5	15.3	8.7	11.9	19.8
Farm worker..........	0.4	0.2	1.3	0.3	0.3	1.0
Unemployed.............	1.7	3.9	5.7	2.2	4.5	6.1
Unemployment rate....	(9.4)	(8.2)	(19.8)	(6.9)	(6.5)	(17.1)
Not in labor force.......	81.9	52.3	71.2	68.3	30.5	64.3
NONWHITE FEMALES						
Total.........	100.0	100.0	100.0	100.0	100.0	100.0
In labor force...........	9.3	31.3	25.5	20.8	53.8	36.0
Employed...............	7.7	26.3	18.6	17.9	43.5	28.2
White-collor worker..	1.6	7.8	0.8	5.5	15.7	1.6
Blue-collar worker...	5.2	18.1	14.5	11.2	27.1	23.7
Farm worker..........	0.9	0.5	3.3	1.1	0.7	2.8
Unemployed.............	1.5	4.9	6.8	2.8	9.7	7.8
Unemployment rate....	(16.1)	(15.7)	(26.7)	(13.5)	(18.0)	(21.7)
Not in labor force.......	90.7	68.7	74.5	79.2	46.2	64.0

Source: 1960 Census, Vol. II, Part 5A, table 14; Part 6A, table 1; and Part 7A, tables 6 and 7.

The work patterns for girls differed from that for boys at the same ages in that they were less likely to be in the labor force, especially if they were not high-school graduates, and had slightly lower unemployment rates if they had graduated from high school. Consistent with the notion that girls, both married and unmarried, once out of school typically undertake domestic duties while boys out of school head for the job market, only one-half of the female graduates at ages 16 and 17 and one-fourth of the drop-outs at those ages were in the labor force, as compared with about three-fifths of each group of boys at the same ages. Similarly, at ages 18 and 19, two-thirds of the girl graduates and one-third of the drop-outs were in the labor force, as compared to nine-tenths and eight-tenths, respectively, of the boys. Girls in the labor force were more than twice as likely to be unemployed if they had not finished high school as if they had. While the unemployment rate was seven percent for 18 and 19 year-old female graduates, it was 17 percent for female drop-outs at the same ages (Figure 3).

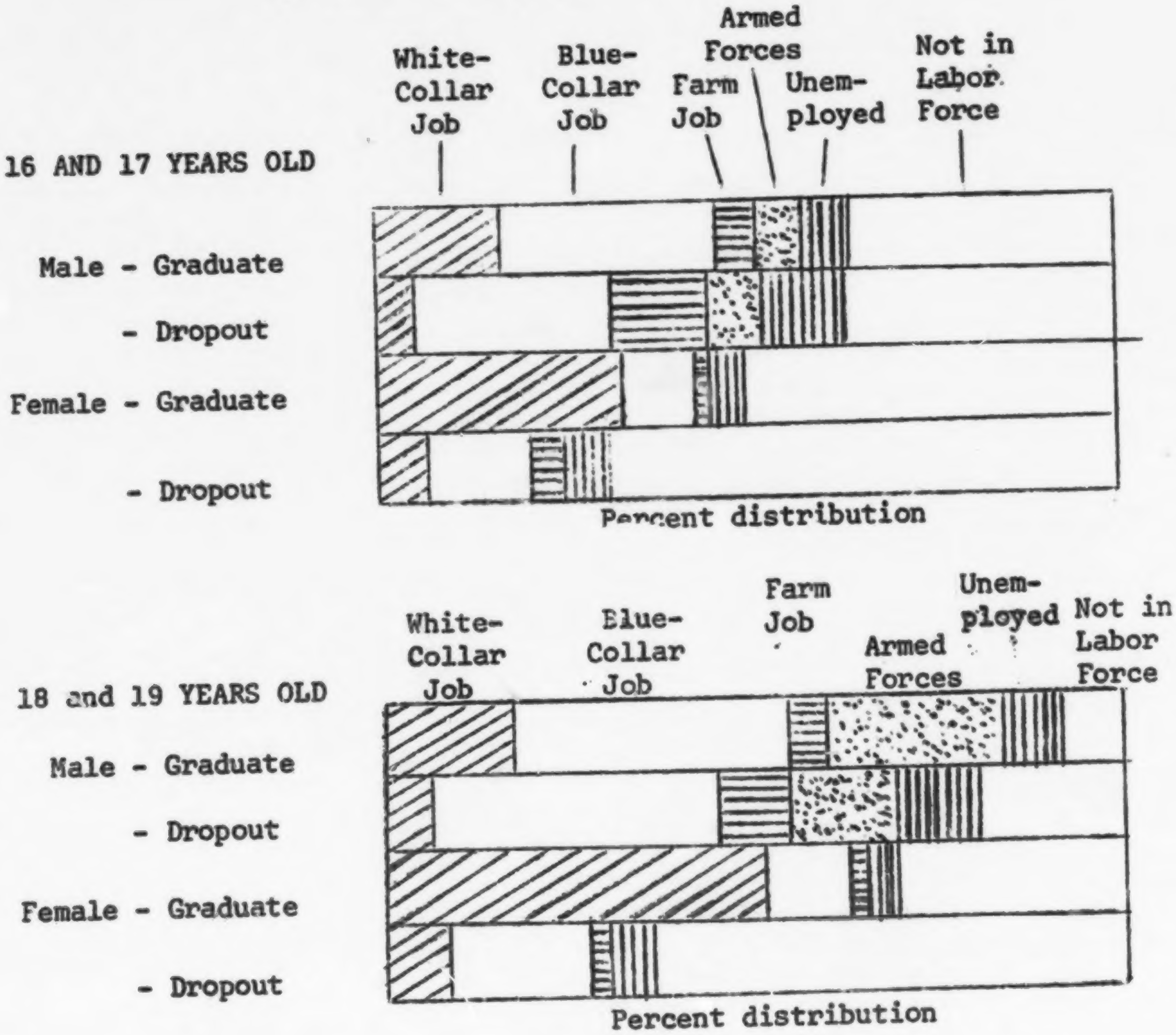
The greater difficulty drop-outs face in obtaining work is understandable in view of their poorer educational preparation for jobs and the increasing demand for better-educated workers. Their lesser chance of being in the labor force, and their greater tendency to not even look for work, must be ascribed partly to the expectation of some drop-outs that their lack of a high-school diploma seriously limits job opportunities and at times makes futile their search for work and partly to their lower motivation for work. According to a recent survey, 53 percent of the 1962 high-school graduates who were not in the labor force were attending special schools for instruction and training in skills which would improve their job opportunities, whereas a mere six percent of the drop-outs not in the labor force were taking such training.[25] If this kind of job preparation is regarded as continuation of schooling, much greater disparity in labor force participation rates of graduates and drop-outs is found.

Completion of high school did not improve the employment picture for nonwhite youths as much as for white youths. In fact, among 16 and 17 year-old nonwhite boys, graduates were just as likely as drop-outs to be out of the labor force or unemployed. By ages 18 and 19, having a high-school diploma was a decided advantage with regard to labor force participation and a slight advantage with regard to employment, but the differential was not as great as for whites at these ages. Work patterns for nonwhite girls were more like those for white girls, although not quite as favorable.

Even among young employed people, completion of high school made a difference in the kinds of jobs they had. Examining the data for boys 16 and 17 years old, one finds a greater likelihood that the drop-out with a job was engaged in farm work. Among those who entered non-farm work, twice the proportion of graduates as drop-outs were in white-collar jobs. This finding might be explained not only by the better qualifications for white-collar jobs that graduates have but also by the preference most employers have for high-school graduates even if the additional schooling is not a necessary requisite for the job. The occupational distribution by education for boys 18 and 19 years old was similar to that for the younger boys, except that those having high-school diplomas were even relatively more

FIGURE 3

Work Patterns of High School Graduates Not Enrolled in College and High-School Dropouts 16 to 19 Years Old, by Age and Sex, 1960



Source: Table 14

likely than those who did not have them to be in white-collar jobs. These occupational differences for graduates and drop-outs were even more accentuated for girls. Of those girls 18 and 19 years old not in school, 81 percent of the employed high-school graduates and 29 percent of the workers who had not finished high school had white-collar jobs. The pattern for nonwhite youths was quite similar to that for all young men and women, although the percentage in white-collar work for both graduates and drop-outs was somewhat less.

The significance of white-collar employment lies partly in the higher prestige and more desirable working conditions such jobs afford, as compared with blue-collar and farm jobs, and partly to the greater income these jobs bring even for the beginning workers. But, white-collar job or blue-collar job, the high-school graduate earns more money than the high-school drop-out in the same type of employment. The graduate will more often be preferred by larger, better-paying organizations, he is sometimes offered higher starting salaries than drop-outs for the same type of work because of his greater promise to the company, and he stands a better chance of early promotion. Of course, lots of drop-outs have higher earnings than graduates of the same age, partly because they have been working for a longer period of time, but the average high-school graduate is paid more than the average drop-out.

Thus, among males 18 to 24 years old in clerical jobs in 1960, 49 percent of those who completed high school had earnings of $3,000 or more as against 39 percent who had some high school but did not finish. The comparison for retail salesmen and sales clerks was still sharper; 40 percent of the graduates and 26 percent of the drop-outs had $3,000 or more of earnings. Even among nonfarm laborers, as in other occupations, the earnings of those in the same age group who completed high school, on the average, exceeded that of the high-school drop-outs. The same was true of young women in different occupations.

FACTORS RELATED TO SCHOLASTIC RETARDATION

As indicated in the previous chapter, not all pupils in school advance one grade each year. Some are required to repeat grades, generally because their performance in that grade did not meet the minimum standard and they were regarded as unprepared to undertake school work in the next higher grade. This lack of progress in school, which we refer to as scholastic retardation,[26] differs for different segments of the population much in the same way as enrollment rates differ.

Since scholastic retardation can begin with the first grade, and in fact the highest proportion of grade repeaters is found in the first grade, it should not be surprising that sharp differentials in age-grade progress are already noted by ages 10 to 13. Almost 30 percent of Indian children and more than 20 percent of Negro children enrolled in school at these ages in 1960 were attending grades below those normally expected for their age (Table 15). The corresponding percentage was as low as eight percent for native white children and five percent for Japanese and Chinese children.

TABLE 15

Percent Scholastically Retarded at Selected Ages, by Ethnic Status, for the United States: April, 1960

(Scholastic retardation refers to enrollment in a grade below the modal grades for persons of a given single age)

Ethnic status	Percent scholastically retarded		
	10 to 13 years old	14 or 15 years old	16 or 17 years old
United States	9.8	14.6	15.1
White	8.2	12.5	12.9
Native white	8.1	12.3	12.7
Native parentage	8.1	12.4	12.9
Foreign or mixed parentage	8.3	11.2	10.8
Foreign-born white	15.6	21.6	28.0
Nonwhite	21.1	30.2	33.3
Negro	21.6	31.1	34.4
Indian	29.2	41.5	43.3
Japanese and Chinese	4.9	4.3	6.9
Other races	11.2	15.2	17.5

Source: 1960 Census, Vol. II, Part 5A, table 1.

Retardation differentials were significantly wider at ages 14 and 15. The rate for Indian children stood at 42 percent and that for Negro children at 31 percent. Only four percent of 14 and 15 year-old Japanese and Chinese children enrolled in school were in grades below those normal for their age. Retardation rates were only slightly higher for youths 16 and 17 years old in school than for those in immediately younger ages. The prevalent number of drop-outs at these ages included many who were scholastically retarded, so that the percentage of retardation went up only slightly despite a moderately large number of new retardates.

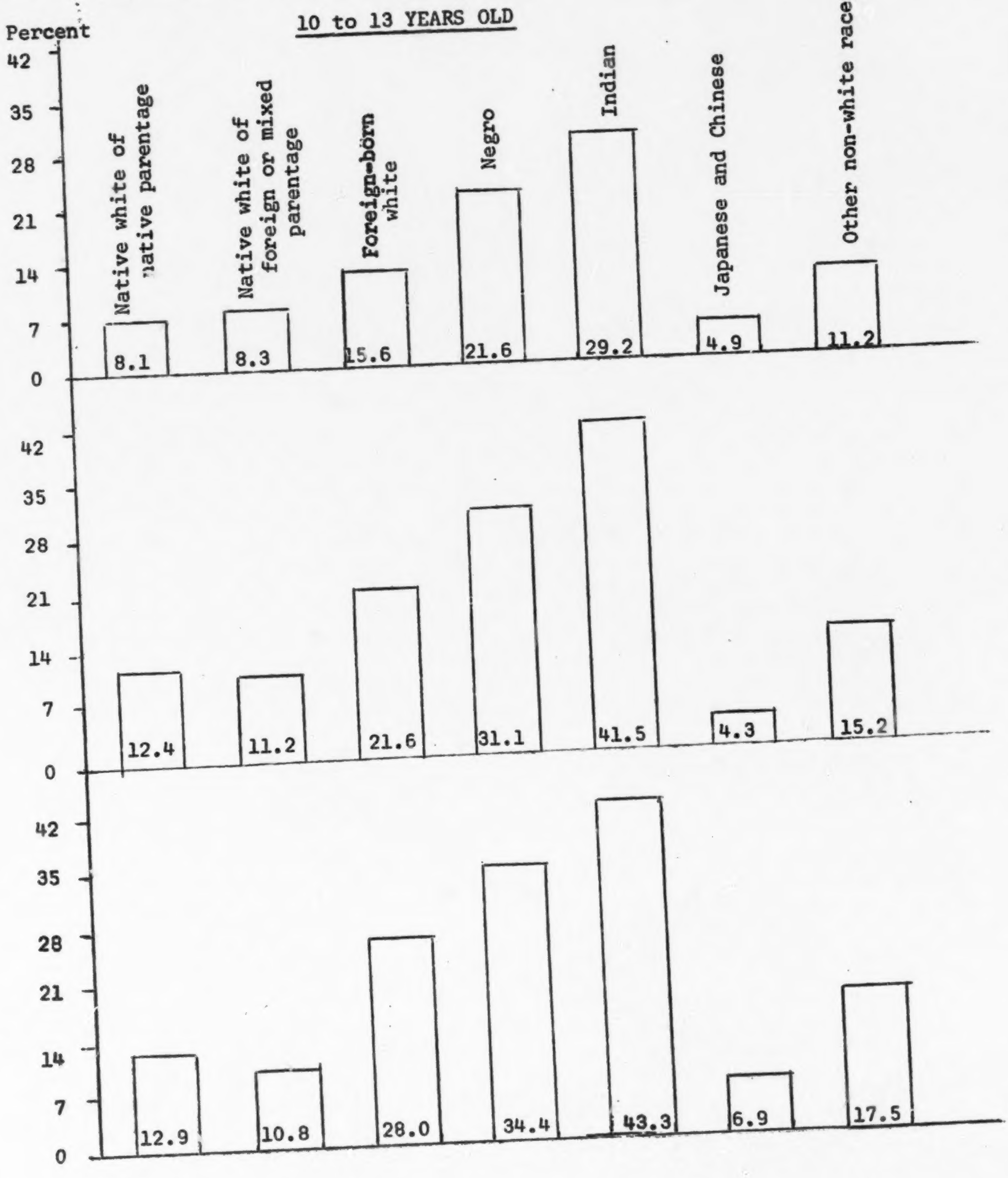
An overall reduction between 1950 and 1960 in the percent of enrolled pupils who were scholastically retarded was found for each of the ethnic groups shown in Table 15. Since the retardation rate was about halved during the decade for all ethnic groups in the 10-to-13 age group, for example, the differentials in scholastic progress had become considerably smaller (Figure 4).

How well children keep up with their age peers seems to be strongly associated with their family status. The percent scholastically retarded was highest for children not in families and considerably higher for children who were not living with one or either parent than for those living with both parents. This relationship was discovered at each age group and for girls as well as boys, with few exceptions. This finding raises some interesting questions about the effect of the family on school performance. How important are home environment and parental guidance to the success of a child in school? Is the loss of a parent, either through death or marital breakup, disturbing enough to a child's scholastic progress to require him to repeat one or more grades? Is the child of a "normal" family (those where both parents are present) more likely to be at the school grade expected for his age because the "normal" family provides a more satisfactory socioeconomic background for the child than do families affected by death or marital dissolution?

Census data can throw some light on the last of these questions. Broken families tend to have lower socioeconomic status and relatively more children from lower-status families are retarded in school. As seen in Table 16, lack of grade progress was much more common among enrolled children having poorly-educated parents. About one-fourth of the boys 10 to 13 years old whose fathers did not have an eighth-grade education were scholastically retarded, as compared with one-tenth of those whose fathers completed the eighth grade but did not finish high school, one-twentieth of those having high-school graduate fathers, and nearly one-thirtieth of the boys whose fathers had some college. If the mother as well as the father had low educational attainment, the chances of a boy being retarded were much greater. For instance, where both parents lacked an eighth-grade education, 35 percent of the boys were attending a grade below that expected for their age; where the mother had reached the eighth grade or beyond but the father had not, about 17 percent of the sons were retarded, one-half the rate found when both parents had the lower education. Where both parents were at least high school graduates, less than five percent of the sons 10-to-13 years-old lagged in grade progress; where both parents had some college, the rate was below three percent. With each increase in

FIGURE 4

Percent of Enrollees Scholastically Retarded, by Age and Ethnic Status, April, 1960



10 to 13 YEARS OLD

Source: Table 15

TABLE 16

Percent Scholastically Retarded at Selected Ages, by Educational Level of Mother and Father, for Children Living with Both Parents, for the United States: April 1960

Educational level of mother and father	Male--percent scholastically retarded			Female--Percent scholastically retarded		
	10 to 13 years	14 or 15 years	16 or 17 years	10 to 13 years	14 or 15 years	16 or 17 years
Total......................	10.8	16.0	16.5	6.8	9.9	9.9
Father had less than 8 years....	25.6	34.3	33.3	17.4	22.8	21.5
Mother had less than 8 years..	34.8	44.8	43.6	25.1	31.8	30.9
Mother had 8 or more years....	17.3	23.9	24.5	10.0	13.8	13.4
Father had 8 to 11 years........	10.3	14.5	16.2	5.8	8.5	9.2
Mother had less than 8 years..	21.4	28.1	29.9	13.0	18.3	18.9
Mother had 8 to 11 years......	11.1	15.5	17.3	6.2	8.8	9.7
Mother had 12 years or some college.....................	6.3	8.6	10.4	3.1	4.6	5.6
Father had 12 years.............	5.3	7.8	9.4	2.9	4.6	5.3
Mother had less than 12 years.	7.9	11.9	13.4	4.9	6.9	7.6
Mother had 12 years...........	4.4	6.1	7.8	2.2	3.7	4.3
Mother had some college.......	3.3	5.5	6.3	1.8	2.6	3.5
Father had some college.........	3.5	5.2	6.6	2.1	3.0	4.0
Mother had less than college..	4.3	6.4	8.0	2.6	3.3	4.7
Mother had some college.......	2.6	4.0	5.2	1.7	2.6	3.2

Source: 1960 Census, Vol. II, Part 5A, table 4.

educational attainment of mother and father, the scholastic retardation rate was reduced. The general relationship between parents' education and retardation observed for 10-to-13 year-old boys was also found for girls and for both sexes at older school ages. While the education of the mother and of the father were independently associated with relative school progress and each contributed a substantial effect, the mother's schooling seemed to be somewhat more closely related to the son's than the daughter's progress in school, whereas the father's schooling was similarly related to the progress of sons and daughters.

Family income was another socioeconomic factor that exerted an independent effect on scholastic retardation. For example, among schoolgirls 10-to-13 years old whose parents did not complete the eighth grade, 26 percent were retarded if the family's income was less than $3,000 but only 10 percent if it exceeded $7,000. Even among those whose parents were high-school graduates, five percent were retarded where the family income was under $3,000 and two percent where it was $7,000 or higher. Here, too, the relationship held for both sexes and for all school-age groups. While the retardation rate was higher for nonwhites than whites and in rural than urban areas, the pattern of socioeconomic differentials in retardation for all of these population subgroups were quite similar, with one notable exception. At the lowest end of the socioeconomic scale, the retardation rate in rural areas was particularly high (Table 17).

Differences in age-grade school progress according to the occupation pursued by the student's father reveal one more dimension of the socioeconomic effect on scholastic retardation. Fully 37 out of 100 enrolled boys 10-to-13 years of age whose fathers were farm laborers or farm foremen were one or more grades below the modal grades for boys of their age in 1960. The corresponding proportions were 21 out of 100 for sons of nonfarm laborers, 10 out of 100 for sons of craftsmen, and three out of 100 for sons of professional workers. In general, for both sexes and all ages, the higher the occupational status the lower the retardation rate (Table 18).

WHO ENTERS COLLEGE?

While higher education is still not attained by a very high proportion of persons, it has increasingly become an educational goal for young people. Jobs traditionally requiring some college education have risen, both in number and as a percentage of all jobs. Moreover, some employers now seek to place college-educated persons in occupations for which high-school graduates formerly were deemed suitable. Higher education has also become more attractive apart from its value in the world of work. Going to college helps one to acquire tastes and a style of life which reap social benefits and which advance an individual's personal development. Moreover, college attendance is generally necessary not only to entry into high-status levels but to maintenance at those levels as well; hence, having a college-educated father may benefit a young man with status aspirations but, unless he also acquires some college education he is likely to find himself handicapped in economic and social situations.

TABLE 17

Percent Scholastically Retarded at Selected Ages, by Education of Parent and Family Income, for Children Living with One or Both Parents, for the United States: 1960

(Education of parent refers to father's education when child was living with both parents or father, and to mother's education when child's father was not living with the household)

Education of parent and family income in 1959	Male--percent scholastically retarded			Female--percent scholastically retarded		
	10 to 13 years	14 or 15 years	16 or 17 years	10 to 13 years	14 or 15 years	16 or 17 years
Total....................	11.5	17.0	17.4	7.2	10.7	10.7
Less than 8 years..............	28.9	35.6	34.9	18.3	24.1	23.0
Under $3,000.................	36.9	47.7	47.4	26.4	33.3	33.6
$3,000 to $4,999.............	24.5	33.6	35.7	16.2	22.7	22.3
$5,000 to $6,999.............	18.3	28.4	28.3	11.4	18.0	16.6
$7,000 and over..............	15.0	21.6	21.8	9.5	13.0	13.1
8 to 11 years..................	11.0	15.6	17.3	7.1	9.1	10.0
Under $3,000.................	17.4	23.9	25.0	10.6	14.4	16.0
$3,000 to $4,999.............	12.9	18.3	20.9	7.6	11.0	12.2
$5,000 to $6,999.............	9.7	14.2	16.9	5.2	8.4	9.9
$7,000 and over..............	7.6	11.3	13.0	3.9	6.1	6.8
12 years or some college.......	4.8	7.1	8.5	2.7	4.1	4.9
Under $3,000.................	8.3	12.4	13.4	5.2	7.1	8.7
$3,000 to $4,999.............	7.0	10.6	12.4	3.9	6.0	7.2
$5,000 to $6,999.............	5.2	7.8	9.7	3.0	4.7	5.7
$7,000 and over..............	3.6	5.6	6.9	2.0	3.2	3.8

Source: 1960 Census, Vol. II, Part 5A, table 5.

TABLE 18

Percent Scholastically Retarded at Selected Ages, by Father's Occupation, for Children Living with an Employed Father, for the United States: April 1960

Occupation of employed father	Male--percent scholastically retarded			Female--percent scholastically retarded		
	10 to 13 years old	14 or 15 years old	16 or 17 years old	10 to 13 years old	14 or 15 years old	16 or 17 years old
Total................	10.2	15.1	15.7	6.3	9.3	9.3
Professional, tech. and kindred workers..............	3.3	5.3	6.8	2.1	2.8	4.1
Farmers and farm managers......	12.2	17.7	17.6	7.2	10.8	10.9
Managers, officials, and proprietors, exc. farm.......	5.0	7.2	8.3	2.6	3.9	4.6
Clerical and kindred workers...	6.0	8.9	10.6	3.5	6.0	5.8
Sales workers..................	4.8	7.9	9.2	2.6	4.2	4.8
Craftsmen, foremen, and kindred workers..............	9.5	14.8	15.8	5.3	8.5	8.9
Operatives and kindred workers.	13.5	19.8	20.1	8.3	12.0	11.9
Service workers................	11.1	16.7	19.5	7.2	10.7	11.8
Farm laborers and foremen......	37.2	45.5	41.7	27.7	34.8	29.6
Laborers, except farm and mine.	20.9	28.5	29.9	13.8	19.2	19.4

Source: 1960 Census, Vol. II, Part 5A, table 7.

Planning for College

A student, even of good family circumstances, is an unlikely candidate for college if he does not prepare for it well in advance of applying for entrance. Preparation for college can take at least two forms: the student can choose a high-school curriculum that is academically-oriented and he can be motivated and plan to attend. Of course, some persons who lack these qualifications get to college, but they are severely handicapped in doing so. Attendance at college usually requires an early commitment on the part of the individual. The data bear this out. Roughly seven out of ten high-school graduates who had been enrolled in a college preparatory curriculum, but only about one in five of those enrolled in some other curriculum, attended college in the fall of 1960.

Socioeconomic status modifies the association between the type of high school curriculum and college enrollment. Twice the proportion of high school graduates from white-collar household as other graduates had taken a college preparatory curriculum and, of graduates having gone through such a curriculum, those from high-status backgrounds were more likely to have enrolled in college. For example, among graduates with a college preparatory background in high school, eight out of ten of those from white-collar households and six out of ten from other households were enrolled in college.

The kind of community one lives in is no doubt a related factor. It is probable that all high schools in middle and upper-class neighborhoods offer academic curricula while many schools in lower-class neighborhoods do not offer their students a program of college preparation. Once a college preparatory curriculum has been taken, however, socioeconomic differences in college attendance likely reflect economic ability to pay for college.

For some students, the choice of an academic curriculum in the early high-school years may represent the most satisfactory choice of a high-school program even where college attendance is not initially a goal. Many of these students may decide subsequently on a college career. As the time for going to college draws near, however, college plans must become firm since most colleges require application for entrance almost a year before the opening of school. Data from a survey in 1959 showed that almost one-half of the high-school seniors in the country, then in the beginning of their senior year, had definite plans to attend college in 1960, the following school year.[27]

Rural-farm students were much less likely than either urban or rural nonfarm students to have definite plans to attend college. At the same time, higher proportions of farm than nonfarm students were undecided about attending college. These facts indicate a significantly greater lack of preparation for college on the part of farm youths.

College plans were almost as common to nonwhite as to white high-school seniors. This finding would seem to run counter to other information about the relative schooling of whites and nonwhites, but it must be realized that school attrition occurs at earlier ages for the average nonwhite and those who reach the senior year of high school are an educationally select group.

The decision to attend college among high-school seniors also varies by socioeconomic circumstance. According to the survey, those from white-collar families more often had plans to attend college and less often were undecided about their college plans. Likewise, there was a close association between the economic position of the family and planning for college. Over-two-thirds of the high-school seniors from families with incomes of $7,500 or more reported definite college plans compared to somewhat less than one-fourth of the seniors in families with incomes of under $3,000. The proportion planning college increased, and the proportion undecided about their plans decreased, as income increased.[28]

The relationship between family income and college plans may reflect both the association between economic status and college plans and a realistic assessment of what the student may reasonably expect to do, given the financial resources available. Where family income is relatively low, it may be recognized that the student has less opportunity to attend college. Consequently, the student may adjust his occupational and educational plans to economic realities. He may, for example, elect to take other than a college preparatory course in high school and, therefore, may not be academically prepared for college entrance.

Reasons given for high-school seniors not planning to attend college substantiate this assumption. About 39 percent of students in families with incomes of less than $5,000, but only about 14 percent of students in families with incomes of $5,000 or more, reported lack of money as a reason for not attending college. Seniors in higher-income families who had foregone college more frequently reported reasons such as "marriage," "military service," and "taking a job" than did students in families with incomes of less than $5,000. Some of these, it should be noted, would be candidates for college at a later date.

Realization of College Plans

How accurate, we might ask, are college plans made nearly one year before the time of attendance, and what are some of the factors that affect the fulfillment of plans? A Census Bureau follow-up study of the high-school students whose educational plans were discussed previously showed that on the whole, of those who graduated from high school, 42 percent actually enrolled in college on either a fulltime or parttime basis in 1960; whereas 53 percent had planned in 1959 to attend college the following year. A breakdown of the plans and attendance of these high-school graduates revealed that 68 percent of those who in 1959 were reported to have had definite plans to attend college were reported to be enrolled in college in 1960; on the other hand, about eight percent of those who did not plan to attend and 20 percent of those who were undecided about their plans were enrolled in college in 1960 (Table 19).[29]

Boys were slightly more likely than girls to carry out their plans. Since we know that girls are equal in ability to boys and that boys are subject to military service and more often must take jobs to provide economic aid to their families, the lesser fulfillment of college plans

TABLE 19

College Plans in 1959 by College Attendance in 1960, By Sex, For High School Graduates in 1960

(Based on persons reporting on both plans and attendance)

Sex and college plans in 1959	College attendance in 1960		
	Total	Attended	Did not attend
Total	100.0	41.6	58.3
Planned to attend	100.0	68.4	31.6
Did not plan to attend	100.0	7.5	92.5
Undecided	100.0	20.1	79.9
Male[1]	100.0	46.0	54.0
Planned to attend	100.0	71.7	28.3
Did not plan to attend	100.0	8.8	91.2
Female[1]	100.0	37.5	62.5
Planned to attend	100.0	64.8	35.2
Did not plan to attend	100.0	6.5	93.5

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[1] Includes persons who were undecided about college plans, not shown separately.

by girls must be ascribed, in large part, to many of them marrying after high-school graduation and foregoing college.

Relatively more whites than nonwhites successfully carried out their college plans. About seven out of ten white high-school graduates, but five out of ten nonwhite graduates, with college plans at the beginning of their senior year attended college. Hence, even though the goal of college attendance may be equally important to both white and nonwhite high-school graduates, the chances of realizing the goal are less for nonwhites.

Both ability and social status served to differentiate the college planners who did attend from those who did not. Twice the proportion of graduates in the highest as in the lowest IQ quartile, and twice the percentage in the highest as in the lowest quartile on scholastic standing, carried out their plans for college. Similarly, a significantly higher proportion of college-oriented youths from white-collar than other households, and from families with $10,000 or more income than from those with less than $4,000 income, actually attended college in the year of their high-school graduation. Thus, many students who apparently have the ability and motivation to go to college are thwarted in attaining higher education, and such frustrated able and willing youths are exceedingly more likely to be found among lower-status groups in the population.

Actual College Attendance

The selective factors at work in determining who plans for college and who is faithful to those plans continue to operate in terms of who, among all high-school graduates, actually enrolls in college.

There is a close relationship between measures of ability and college attendance. About two-thirds of the graduates in the top quartile on IQ, and a similar proportion in the top quartile on scholastic standing, enrolled in college in 1960. The proportion attending college was progressively lower in each of the other quartiles. Even in the lowest quartiles, however, a substantial minority of graduates were enrolled in college (Table 20).

Ability and school performance are not perfectly correlated and persons who rank high on both stand the best chance of going to college. About two-thirds of the graduates in the top one-half of both distributions were enrolled in college; one-third of those in the upper one-half on IQ but lower one-half on scholastic standing attended college; one-fourth of the graduates with a high scholastic rating but low IQ went to college; and only about one-fifth of those ranking in the bottom one-half of each measure were enrolled in the fall of 1960.

It is thus apparent that proportionately more graduates of higher academic ability than those of lower ability were enrolled in college. It is equally apparent that a substantial proportion of the graduates with greater ability did not enroll in college and that a significant minority of graduates of lesser ability did attend. Furthermore, a high ranking on both IQ and scholastic standing was more closely related to college attendance than a high ranking on only one. To the extent that the two measures tapped different dimensions of ability, having a high IQ seemed slightly more important than getting good grades in school.

TABLE 20

College Enrollment of High School Graduates, by IQ and Scholastic Standing in High School, for the United States: 1960

(Data refer to college enrollment in the fall of the year for youths who graduated from high school earlier that year. Some additional graduates may have begun college at a later time.)

Quartile	Percent enrolled in college	
	IQ	Scholastic standing
Top quartile	67.2	66.6
Second quartile	38.2	43.6
Third quartile	24.8	33.6
Bottom quartile	15.5	19.2

Source: Bureau of the Census, and Economic Research Service, Department of Agriculture, Series Census-ERS (P-27), No. 32, table 9.

Admittedly, the two measures used are imprecise indicators of ability. Scholastic standing is a composite of teachers' judgments, the type of grading system used, the competition within a specific high-school class, and the motivation of the student, as well as an objective measure of the youth's ability to absorb what he is taught. Although IQ tests are designed to be standard measures of intelligence for persons of a given age group, there has been some evidence that the tests are biased in favor of students from particular social and cultural backgrounds.[30] In spite of these weaknesses, however, the two measures can at least be said to be highly correlated with ability and they thus offer a useful indication of the ability dimension.

The importance of ability notwithstanding, it is sometimes said that a youth's chance of going to college is largely determined at birth; that is, the social position of his family is a prime factor in his getting higher education. Although it must be recognized that the social status of families can change over the early life span of an individual, there is some substance to this belief. A 1960 Census Bureau survey showed, for example, that college attendance was strongly associated with the educational level of the person's father and with family income.[31]

College enrollment rates of men in their early twenties were several times as large for those whose fathers were college graduates as for those whose fathers never finished high school (68 vs. 12 percent). Sons were about twice as likely as daughters to be enrolled in college, but a daughter's chances of being in college tended to be relatively more like a son's if her father was a college men. Similarly, although nonwhite persons in the age group studied were only one-half as likely to be enrolled in college as white persons of the same age, their chances were quite good in comparison when the fathers' educational level was the same.

Family income is an important factor affecting the relationship between father's educational attainment and college attendance. Among young men and women whose fathers did not graduate from high school, the proportion enrolled in college was nine percent where family income was less than $5,000 but 44 percent where family income was $10,000 or more. Among persons whose fathers attended college, about 23 percent of those with family income of less than $5,000 and 70 percent with family income of $10,000 or more were in college. Roughly the same proportion of persons with well-educated fathers but low family income as with poorly-educated fathers but high income were attending college, indicating that father's education and family income are about equally associated with a person's chances of going to college.

The occupation in which the household head was employed was also closely related to college attendance. In another 1960 survey, it was found that twice as many 1960 high-school graduates from white-collar households as from manual and service or farm households were enrolled in college in the fall of 1960. Even among families with $6,000 or more income, a significantly higher proportion of graduates from white-collar than other households were enrolled in college (Table 21). This suggests that, while the several socioeconomic variables have similar relationships to

TABLE 21

College Enrollment of High School Graduates, by Occupation of Household Head and Family Income, for the United States: 1960

(See headnote of table 20)

Family income in 1959	Percent enrolled in college	
	Household head a white-collar worker	Household head not a white-collar worker
Under $6,000....................	44.7	24.9
$6,000 and over.................	61.7	42.0

Source: Bureau of the Census and Economic Research Service, Department of Agriculture, Series Census-ERS (P-27), No. 32, table 13.

college attendance, they each have an independent influence on college-going.

The cumulative effect of several variables on college attendance can be demonstrated through multiple regression analysis, in which the effect of a number of items considered simultaneously can be measured. Such analysis, based on data for thirteen independent variables (including demographic, socioeconomic, ability, and educational planning factors), showed a correlation of .68 between these items combined and college attendance. This multiple correlation and the simple correlations between college attendance and each of the independent variables are shown graphically in Figure 5. The items which correlated most highly with college attendance were college plans and high-school curriculum. The combination of these two items alone correlated .64 with college-going. Correlations of intelligence (IQ), scholastic standing, family income, and occupation of the household head with enrolling in college were moderate, and the correlations for each of the remaining variables and college attendance were positive but low.[32]

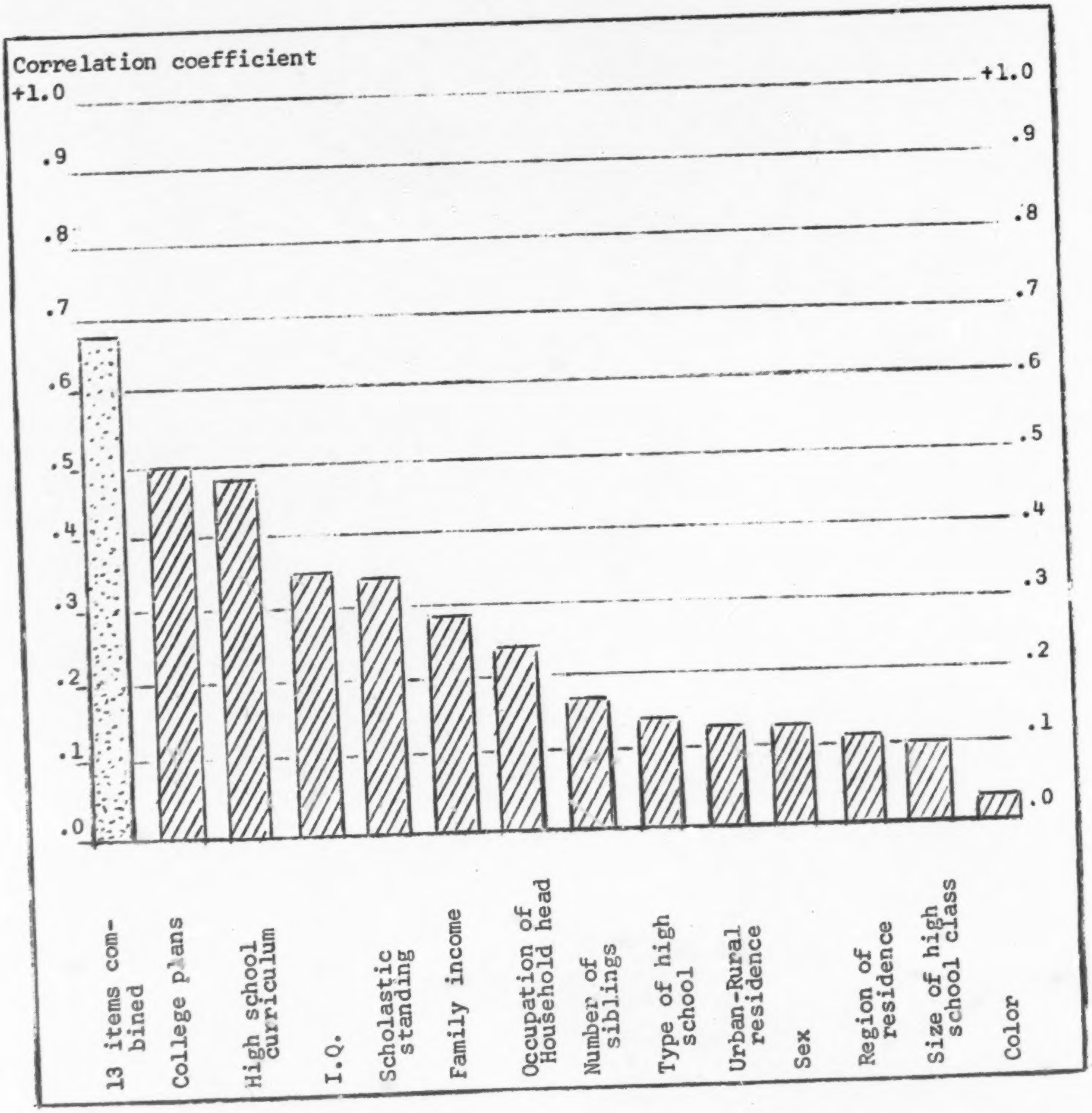
Since the "explained" variance (that proportion of the variance in college attendance explained or accounted for by variation in the independent variables combined) was only 48 percent (the multiple correlation squared), it is evident that whether or not a high-school graduate goes on to college is dependent on much more than his personal and family background, his ability, and his preparation for college. Motivations to become educated and achieve high status, encouragement by the family and friends, and educational traditions in the community where one lives are among other factors which lead youths to acquire higher education.[33]

Two-Year Vs. Four-Year Colleges

The growing size of junior and community college enrollments and the essential difference in the types of programs offered by these two-year colleges, as compared with programs in four-year colleges, makes the distinction between these kinds of schools an important one. Are the high-school graduates entering two-year colleges unlike those entering four-year colleges? Do factors affecting two-year college attendance seem to be different from those affecting four-year college attendance? The 1959-60 Census Bureau survey provides some answers to these questions.[34]

(1) Youths who enroll in two-year colleges are less likely than those going to four-year colleges to have prepared for college. One-half of the two-year college students, as compared to four-fifths of the four-year college enrollees, had been in a college preparatory curriculum in high school; only three-fourths of the two-year college students, as compared with nine-tenths of the four-year college enrollees, had plans for going to college early in their high-school senior year. (2) Presumably as a function of the typical city location of two-year colleges, about one in four beginning college students in nonfarm areas, but one in ten from farms, were enrolled in a two-year college. (3) While college students as a group are drawn from the more able high-school graduates, junior or community college students were less selective of high ability. Whereas over 40 percent of four-year college students were in the top quartile of their high-school class on both IQ and scholastic standing, less than 10 percent of two-year college students ranked that high; where only seven percent of four-year

Figure 5--Correlations of College Attendance with Selected Items



college enrollees were in the bottom one-half on both indicators of ability, about 28 percent of the two-year college students fell into that category. (4) The two-year college enrollees were recruited relatively more frequently than four-year college students from the "working" class, but the difference was not great. It was much more pronounced for men than women. Family income accounted less for the type of college attended than did the occupational class of the household head. (5) Ability was the sharpest differentiator of whether a college-bound youth entered a two-year or four-year college. The extent of prior planning for college was less important than ability but more important than socioeconomic status.

Migration to college

An additional factor affecting college enrollment is the proximity of a potential student's residence to a college. A person interested in going to college who is not strongly motivated or who has limited means is probably more likely to attend if the college is within commuting distance from home. This condition is no doubt related to the growing number of junior and community colleges and their popularity.

Yet, as a 1958 study by college registrars showed, a vast number of young persons crossed state lines to attend institutions of higher education. More than one out of three students in professional schools and about one out of four in graduate schools had been inter-state migrants to school. Roughly one out of six at the undergraduate level attended college in a different state than the one they came from, and even one out of ten junior or community college students crossed state lines to attend college. Not all students reported crossing state lines to go to college were migrants in the demographic sense. Many still lived with their parents and commuted to school in another state, a custom found particularly in and around large metropolitan areas.

The effect of college student migration on enrollment in the various states was minimized by the largely compensating interchange of students among the states. Hence, the 1958 study showed that, while over one-half million students crossed state lines to go to college, the net change in the number of college students by state was only about 50,000 or less than ten percent.

Conceivably, such phenomena as the addition of new community colleges and the generally greater expansion of public than private colleges may result in the migration of a smaller proportion of future college enrollees. At present, however, the movement of college students from home to school may be classed as an important contemporary migration movement which has had a moderate effect on the geographical redistribution of college students.

Reasons for Not Entering College

Despite the increasing trend toward college enrollment, vast numbers of young people do not go to college. What reasons are given for high-school graduates not attending college? A question on this subject in the 1959 sample survey was directed at persons 16 to 24 years old who had completed high school but never attended college. These persons presumably met the minimum requirements for college entrance, yet less than one percent reported applying but not being admitted to a college (Table 22).

Although we should not minimize the significance of economic considerations, which were important to one-fourth of the males and about one-sixth of the females, other reasons would seem to be also important. Reported responses indicating no desire to go to college, as well as those of taking a job or getting married suggest that a substantial proportion of potential college students have primarily other than economic reasons for not attending college.

While essentially similar distributions of reasons for not going to college were reported by urban and rural youths, girls differed from boys mainly in that marriage was a prior reason to economic considerations for girls and boys often cited military service as the factor preventing their college attendance. Economic constraints clearly differentiated color groups, however. Forty-five percent of the nonwhite high-school graduates, but only 16 percent of the whites, reported lack of money as the reason for never attending college. The weaknesses of the question on reasons limit the interpretation of these data,[36] but it is apparent that many youths who graduate from high school forego college involuntarily and economic barriers stand in the way of many of these persons.

THE COLLEGE YEARS

Each cohort of students entering college is diminished in size as progress toward the goal of graduation is made. The pattern of dropping out of college, like the pattern of leaving school below the college level, is selective of certain characteristics of the student body. In the following pages, these selective factors will be examined along with other characteristics which differentiate college students from the general population of college age.

Socioeconomic Backgrounds of Students

The selective processes which operate at points along the education continuum result in a group of college students whose socioeconomic backgrounds generally are quite different from that of the average person of college age. As shown in Table 23, college students in the fall of 1960 were less than one-half as likely as all persons of college age to come from families where family income was less than $5,000 and in which the father did not finish high school. On the other hand, they were two and one-half times as likely to be from families where the income level was $7,500 or more and in which the father had attended college. Although both socioeconomic variables differentiated college students from the general population, the differences with regard to father's education were greater than those by family income.

This social selection of college students appears to reflect mainly the selection in college entrance. As Wolfle found, after students get to college the influence of socioeconomic differences disappears almost entirely. When college entrants were classified by the occupations of their fathers, the percentage getting degrees was fairly constant among occupation groups.[37]

TABLE 22

Major Reason Reported for Not Enrolling in College, by High School Graduates 16 to 24 Years Old, by Sex, for the United States: October 1959

Major reason reported for not enrolling in college	Percent by major reason reported	
	Male	Female
Total	100.0	100.0
No desire to go	32.1	31.8
Not admitted	0.9	0.3
Lacked money	24.9	15.2
Took a job	18.5	22.9
Needed at home	1.4	0.3
Military service	12.5	0.2
Marriage	5.0	22.1
Other reason	2.7	6.3
Reason not reported	2.0	0.9

Source: Bureau of the Census and Economic Research Service, Department of Agriculture, Series Census-ERS (P-27), No. 30, table 13.

TABLE 23

Educational Level of Father and Family Income for College Students and other Persons 16 to 24 Years Old Who Were Not Household Heads or Wives: October 1960

Educational level of father and college enrollment status	Total[1]	Family income			
		Less than $5,000	$5,000 to $7,499	$7,500 to $9,999	$10,000 and over
Persons 16 to 24 Years Old					
Total	100.0	40.2	25.0	15.4	19.4
Father not a high school graduate	64.8	33.4	16.2	8.4	6.7
Father a high school graduate, no college	17.8	4.5	6.0	2.6	4.6
Father attended college	17.4	2.2	2.8	4.3	8.1
College Students 16 to 24 Years Old					
Total	100.0	20.7	25.5	21.9	32.0
Father not a high school graduate	38.4	13.2	12.3	6.7	6.2
Father a high school graduate, no college	22.2	4.8	7.2	4.4	5.8
Father attended college	39.4	2.7	6.0	10.9	19.9
Index of Concentration of College Students[2]					
Total	100.0	51	102	142	165
Father not a high school graduate	59	40	76	80	93
Father a high school graduate, no college	125	107	120	169	126
Father attended college	226	123	214	253	246

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[1] Excludes persons for whom family income and father's education were not reported

[2] Ratio of percentage for college students to corresponding percentage for all persons x 100.

Source: Unpublished data from the Current Population Survey for October 1960

This finding is not entirely consistent with reasons given by students for leaving college, as reported in a Census Bureau survey.[38] About one-fourth of the males and roughly one-tenth of the females specifically cited financial reasons for dropping out. Yet the vast majority of drop-outs cited major reasons which were not necessarily related to socio-economic status--loss of interest, poor grades, marriage, military service, and taking a job.[39]

No information is available on time trends in the socioeconomic selection of college students. Have differentials been narrowing, widening, or staying the same? As regards the future, we might expect a reduction in the social and economic differentials in college attendance as the expansion of junior and community colleges opens up college attendance opportunities to persons with more limited economic means and from more culturally-deprived backgrounds. The present strength of social factors affecting college enrollments, however, suggests that socioeconomic status will continue to play a decisive role in the future selection of college students.

Marriage patterns

College attendance, involving as it usually does a serious commitment to learning and an interruption or postponement of some institutionalized social activities, has a marked effect on marriage patterns. As compared with the population of comparable ages not enrolled in school, college students tend less often to be married. For instance, at ages 20 and 21 in 1960, nine percent of male college students and eight percent of the female students were married, in comparison with 32 and 60 percent, respectively, for men and women at these ages who were not enrolled in school.

Still, many young persons pursue a college education while married, and the proportion who are married increases with academic advancement. Thus, while only 12 percent of male freshmen and eight percent of female freshmen in 1960 were married, the corresponding percentages were 37 and 25 percent for senior men and women and 54 and 37 percent, respectively, for those in graduate or professional schools (Table 24, Figure 6).

Not a great deal is known about time trends in the proportion of college students who are married. Census Bureau data on the subject have only been available since 1957 and those data reveal no significant change in the college marriage pattern since that time. A sharp upward trend is alleged to have occurred between the pre-World War II and postwar periods, based on the findings of a few studies of college classes and alumni from specific institutions of higher education.[40] How well these findings can be generalized to the United States as a whole and how much of the trend reflects changes in social values is problematic. Nonetheless, available statistics indicate that demographic and socioeconomic factors alone could account for most of the change. The average age of college students rose during the prewar to postwar period, primarily as a function of the college attendance of many war veterans, and a somewhat increasing proportion of students were apparently coming from working-class homes. Both of these tendencies are associated in the general population with higher proportions married.

TABLE 24

Living Arrangements of College Students, by Sex, Marital Status, and College Class, for the United States, April 1960

Sex, marital status, and living arrangements	All college students	College Class				
		Freshman	Sophomore	Junior	Senior	Graduate or Professional
Male	100.0	100.0	100.0	100.0	100.0	100.0
Married, living with spouse	27.4	11.5	19.7	24.9	37.3	54.2
Household head or wife of head	26.4	10.9	18.8	24.0	35.9	53.3
In parents' household[1]	0.8	0.5	0.8	0.8	1.2	0.8
In other relative's household	0.1	0.1	0.1	0.1	0.1	0.1
In nonrelative's	0.0	0.0	0.0	0.1	0.1	0.1
Other marital status	72.6	88.5	80.3	75.1	62.7	45.8
Household head	5.1	2.4	4.1	50.0	6.3	9.3
In parents' household[1]	29.0	40.5	35.9	26.8	21.3	12.0
In other relative's household	2.0	2.6	2.4	2.0	1.6	1.1
In college dormitory[2]	24.4	32.5	26.3	27.5	20.3	10.5
Female	100.0	100.0	100.0	100.0	100.0	100.0
Married, living with spouse	13.7	7.6	10.4	12.7	24.9	36.7
Household head or wife of head	13.2	7.3	9.9	12.2	24.1	35.8
In parents' household[1]	0.4	0.3	0.4	0.4	0.7	0.8
In other relative's household	0.1	0.1	0.1	0.0	0.0	0.1
In nonrelative's household	0.0	0.0	0.0	0.0	0.1	0.1
Other marital status	86.3	92.4	89.6	87.3	75.1	63.3
Household head	3.8	1.9	2.4	3.5	5.9	16.4
In parent's household[1]	29.0	33.9	31.3	24.3	23.6	18.1
In other relative's household	2.3	2.9	2.2	1.8	1.7	1.8
In college dormitory[2]	35.5	39.5	37.3	38.3	30.9	9.1
In other living quarters	15.7	14.2	16.3	19.4	12.9	17.8

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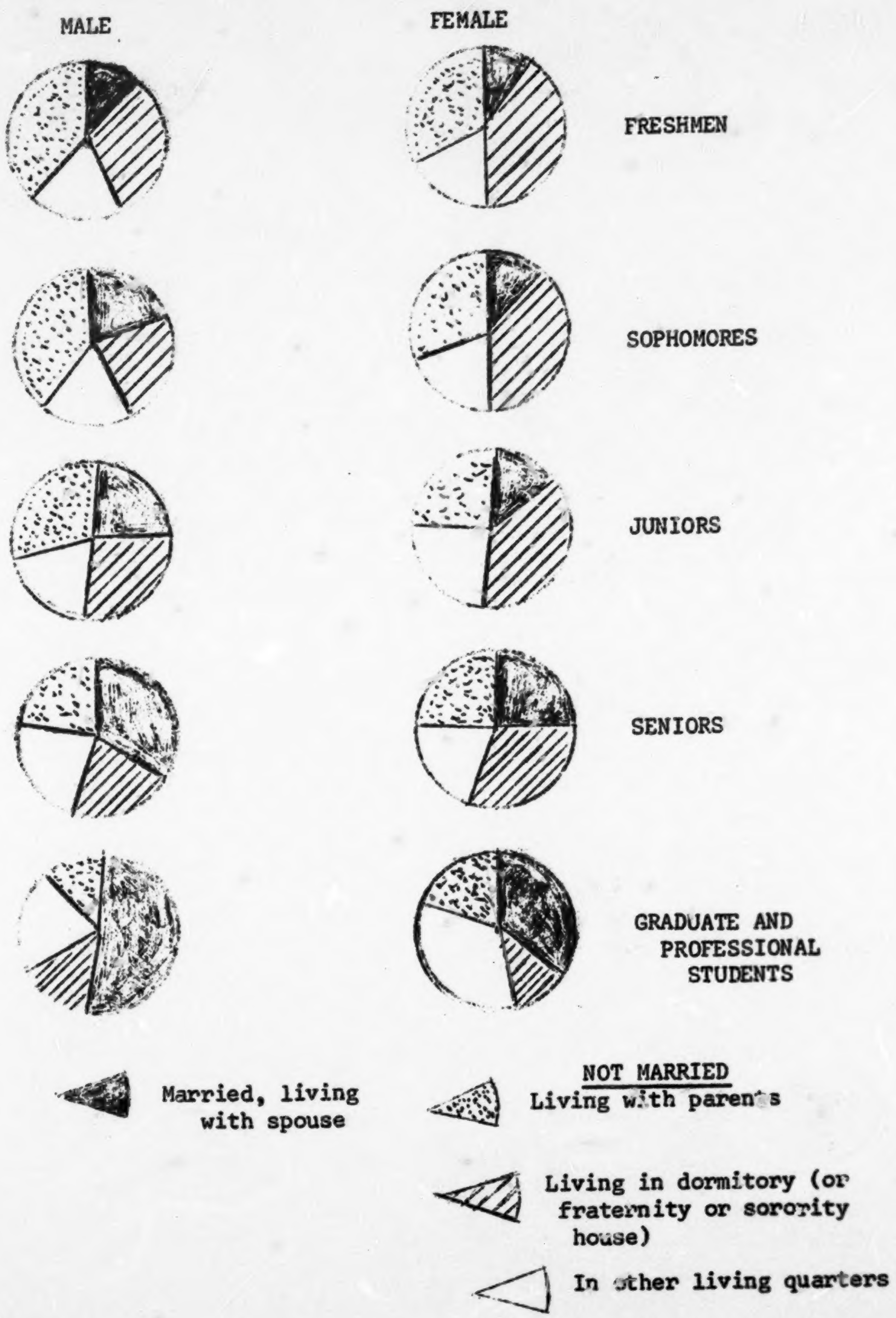
[1] Includes parents-in-law.

[2] Includes sorority houses and fraternity houses.

Source: 1960 Census, Vol. II, Part 5A, Table 9.

Figure 6.--Living Arrangements of College Students, by Sex and College Class, April 1960



Source: Table 5

To the extent that factors other than demographic and socioeconomic ones are related to an increase in college marriage rates since 1940, considerable weight should be attached to the effect of institutional practices. Housing for married students was first provided on a large scale for veterans of World War II and institutions of higher education have maintained or expanded these facilities for the later non-veteran generation of students.

Living Arrangements

Data from the 1960 census show that nearly all of the married students had their own households, presumably some in college-sponsored housing units and others in off-campus units. A small percentage of these persons lived with their parents or with other relatives.

Among the unmarried students, one-third of the undergraduate men and two-fifths of the undergraduate women were in college housing with little distinction by college class. The proportion of unmarried students at the graduate and professional level who were in college housing was considerably below that of the unmarried undergraduate students. Almost similar proportions of the unmarried students (two-fifths of the undergraduate men, one-third of the undergraduate women, and slightly smaller percentages of graduate students) were living with their parents while attending college.

A sizable proportion of these unmarried students had set up their living quarters away from the campus and from their parents, mostly in rooming and boarding houses and apartments. Nearly one-fourth of all unmarried students had such living arrangements. The percentage tended to be small among freshmen but grew larger with each college class. Virtually one-half of the graduate and professional students who were not married fell into this category. These living patterns reflect, of course, the college residence requirements laid down by the educational institutions, as well as the wishes and preferences of the students and their parents.

Income and Work Patterns

The cost involved is an important factor in a student's ability to continue through college. These costs vary widely, depending on the type of college attended, whether or not the student lives at home, and whether attendance is on a full-time or part-time basis, but in any event the costs are significant.[41] In addition to the direct costs of college, most students necessarily forego the income which could have been derived from full-time employment. In the long run, this temporary loss of income may be more than compensated for, but at the time of enrollment it may be an important consideration.

College students generally have few sources of earned income to help defray college costs while they go to school and what sources they do have usually produce small incomes. About 88 percent of college men and 68 percent of college women in 1960 reported some earnings during the previous year; however, a large group of these students received all their earnings from summer work. The percentages cited, therefore, refer to students who worked at some time during the year. Roughly 57 percent of the men and 40 percent of the women were working at the time they went to college (Table 25 and Table 26).

Of all male students with earnings during the year, slightly more than one-third made less than $1,000 and some of these students even had part of this income from sources other than earnings. About one-half of the college men with earnings during the year had incomes of $2,000 or more, but two-fifths of these men had incomes other than earnings to help bring them over the $2,000 mark. Of the female students with annual earnings, fully 70 percent made less than $1,000 and only one-sixth showed incomes of $2,000 or more.

It is not surprising, therefore, that 70 percent of college girls and 55 percent of college boys in 1959 had some financial support from their parents, and that 40 percent of the girls and 21 percent of the boys relied solely on their parents for the financial means to stay in college.[42] For over one-half of the students, their own work or savings contributed at least partly to support for college attendance; for one-fifth of them, it was the sole financial basis for going to college. Some form of scholarship, excluding the GI Bill and grants from employers, was reported for 16 percent of all students.

Working one's way through college, at least in part, becomes more common with advancement through the college system. Not quite one-half the freshmen boys, but three-fifths of the seniors, were in the labor force at the time of college attendance. Moreover, the proportion whose income was $2,000 or more increased each year, being one-fifth for freshmen and two-fifths for seniors. It is probable, too, that students rely less and less on their parents for financial aid as they continue in college, but data are not available to substantiate this assumption.

One consequence of a higher marriage rate in each more advanced college class is that an extra burden is added to the already difficult task of providing financial assistance. Not only did married students in 1960 have spouses for whom support was also needed, but 17 percent of college males (two-thirds of the married ones) and eight percent of college females (over one-half of the married ones) had children as well. Most of the college women with children had husbands in the labor force. Presumably many of these women attended part-time and their husbands worked full-time so that the financial and familial burdens were not great. Among married college men, 87 percent of those with children and 74 percent of those without children were in the labor force. For about 27 percent of those with children and 76 percent of those without children, the wife was in the labor force. Among married couples where the husband was in college, in one-tenth of the cases both the person and his wife were in the labor force and in a large fraction of these cases the couple had children.

The foregoing analysis leads to several important generalizations about factors related to school and college enrollment. (1) The relative importance of factors associated with entrance into and continuation in school varies along points of the education continuum. The independent effects on school retention of sex and ethnic status tend to be small at all school levels, even though males are more likely to attend college and graduate from

Table 25

Income of College Students, by Sex, College Class, and Type of Income, for the United States: April 1960

Sex and income in 1959 by type	All college students	College Class				
		Freshman	Sophomore	Junior	Senior	Graduate or Professional
Male	100.0	100.0	100.0	100.0	100.0	100.0
With earnings only	63.8	69.8	76.1	63.1	58.7	55.7
Under $1,000	27.9	39.7	31.6	27.6	21.6	11.6
$1,00 to $1,999	14.7	14.7	16.3	16.9	14.6	10.4
$2,000 and over	21.2	15.4	19.2	18.7	22.6	33.7
With earnings and other income	23.8	15.1	20.3	25.4	29.9	34.4
Under $1,000	4.2	5.1	4.3	4.5	3.9	2.7
$1,000 to $1,999	5.2	3.4	4.9	6.4	7.0	5.1
$2,000 and over	14.5	6.5	11.2	14.4	19.0	26.6
With other income only	2.5	1.5	2.0	2.6	3.5	3.5
Under $1,000	1.3	1.0	1.1	1.3	1.7	1.5
$1,000 and over	1.2	0.5	0.9	1.3	1.8	1.9
Not an income recipient	9.9	13.6	10.6	8.9	7.9	6.4
Female	100.0	100.0	100.0	100.0	100.0	100.0
With earnings only	59.2	57.5	58.9	60.2	60.3	64.3
Under $1,000	42.3	45.8	45.6	44.8	36.6	16.6
$1,000 to $1,999	7.0	6.1	6.6	7.4	8.2	10.1
$2,000 and over	9.8	5.7	6.6	7.9	15.4	37.6
With earnings and other income	9.1	8.0	8.4	9.0	9.9	17.1
Under $1,000	4.9	5.1	5.1	5.2	4.4	2.6
$1,000 to $1,999	1.7	1.3	1.6	2.1	2.2	2.6
$2,000 and over	2.5	1.5	1.7	1.7	3.3	11.9
With other income only	3.2	2.8	3.0	3.0	3.8	4.6
Under $1,000	2.1	2.1	2.1	2.0	2.4	1.9
$1,000 and over	1.0	0.7	0.9	1.0	1.4	2.7
Not an income recipient	28.5	31.7	29.7	27.8	26.0	14.0

Source: 1960 Census, Volume II, Parts 5A, Table 10.

TABLE 26

Family Status of College Students, by Labor Force Status of Student and Spouse, and College Class, for the United States: April 1960

Family status and labor force status	All college students	College class				
		Fresh-man	Sopho-more	Junior	Senior	Graduate or professional
Male	100.00	100.0	100.0	100.0	100.0	100.0
Married, living with wife	27.4	11.5	19.7	24.9	37.3	54.2
In labor force	22.5	10.3	17.1	19.8	29.2	44.1
Wife in labor force	9.2	4.2	6.7	8.7	12.2	17.6
Have children	3.7	1.8	2.9	3.5	4.7	7.0
Do not have children	5.5	2.4	3.8	5.2	7.5	10.7
Wife not in labor force	13.3	6.1	10.5	11.1	17.0	26.5
Have children	11.4	5.1	8.9	9.5	14.5	23.2
Do not have children	1.8	0.9	1.6	1.5	2.5	3.3
Not in labor force	4.9	1.2	2.5	5.2	6.0	10.1
Wife in labor force	3.0	0.8	1.6	3.4	5.0	5.9
Have children	1.0	0.3	0.5	1.1	1.7	1.8
Do not have children	2.0	0.5	1.1	2.3	3.3	4.2
Wife not in labor force	1.9	0.5	1.0	1.8	3.1	4.2
Have children	1.3	0.3	0.6	1.1	2.1	3.1
Do not have children	0.6	0.2	0.4	0.7	1.0	1.1
Other marital status	72.6	88.5	80.3	75.1	62.7	45.8
In labor force	34.2	37.5	38.1	34.6	30.8	26.6
Not in labor force	38.5	50.9	42.2	40.4	31.9	19.2

Table 26--(Continued)

Family status and labor force status	All college students	College class					Persons 20 to 24 years old not in college
		Freshman	Sophomore	Junior	Senior	Graduate or professional	
Female	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Married, living with husband	13.7	7.6	10.4	12.7	24.9	36.7	68.4
In labor force	5.9	2.7	3.9	5.1	10.7	22.9	21.1
Husband in labor force	5.5	2.5	3.6	4.7	9.7	21.3	2.0
Have children	2.4	1.2	1.7	2.1	4.4	7.9	10.0
Do not have children	3.1	1.3	1.9	2.6	5.3	13.4	10.1
Husband not in labor force	0.5	0.2	0.3	0.4	1.0	1.6	0.9
Have children	0.1	0.1	0.0	0.1	0.2	0.2	0.3
Do not have children	0.4	0.1	0.2	0.3	0.8	1.3	0.6
Not in labor force	4.9	4.9	6.5	7.6	14.2	13.9	47.2
Husband in labor force	3.0	4.6	5.9	6.9	12.6	12.5	46.2
Have children	4.8	3.5	4.3	4.4	7.9	8.0	40.6
Do not have children	2.2	1.0	1.6	2.5	4.7	4.5	5.7
Husband not in labor force	0.7	0.3	0.6	0.7	1.6	1.4	1.0
Have children	0.2	0.2	0.2	0.2	0.4	0.4	0.8
Do not have children	0.5	0.1	0.5	0.5	1.2	1.0	0.2
Other marital status	86.3	92.4	89.6	87.3	75.1	63.3	31.6
In labor force	34.5	31.0	36.0	37.7	33.2	43.0	23.9
Not in labor force	51.8	61.4	53.6	49.6	41.9	20.2	7.7

Source: 1960 Census, Vol. II, Part 5A, Table 8.

it than are women and ethnic differences in retention are substantial at the lower points of the continuum. The independent effects of urban-rural residence stand out at the beginning school ages, but such differences by residence as appear at more advanced educational levels can be explained by other factors. Socioeconomic status has a small to moderate independent effect at all points along the continuum but its strongest effect is probably at college entrance. Ability is an exceedingly important factor after compulsory school ages, being the principal factor related to graduation from high school and from college. Advance planning is an especially important determinant of who goes to college. Numerous other factors, such as motivations, financial means, and the "social milieu" in which a person is reared affect entrance into and completion of college.

(2) However large or small the effects of different factors, these effects are additive in the sense that each increments the probability of persistence in school. For example, persons whose characteristics are all favorable with regard to continuation in school stand a better chance of moving on to a higher educational level than do persons who lack any of the favorable characteristics.

(3) It is not possible to ascertain which factors are becoming more important and which are decreasing in importance as determinants of school attendance due to the absence of trend data. It is likely, however, that most of the differentials in enrollment are narrowing and will continue to narrow in the future.

(4) School dropouts are at a disadvantage, relative to graduates, in the economic market. They are more likely to be out of the labor force; if in the labor force--are more likely to be unemployed; if employed--are more likely to have lower status occupations and lower earnings.

(5) Most of the relationships between demographic, social, and economic factors and school retention are also found between these factors and scholastic retardation.

More than any other nation in the world, the United States offers unrestricted educational opportunities to all classes of the population. Further democratization of education will occur primarily at the college level, since most people now remain through the pre-college levels. It is probable that new distinctions will be substituted for some of the traditional ones. Differentials in the personal and family characteristics of college and non-college youth may give way to differentials by the type of college attended. In any event, the rising trend of school and college enrollment among all parts of the population signifies a rising trend in the educational status of the general population in future years. Subsequent chapters will deal with this latter trend and its implications for the social structure.

CHAPTER III

Factors Related to the Educational Attainment of the Adult Population

Differences in the educational experience of the population affect the careers, occupations, and other characteristics of the adult population. The last chapter examined socioeconomic and demographic influences on enrollment rates; the present chapter examines the effects of different levels of educational attainment on social and economic characteristics of the adult population. The census contains no information about the quality of education received, so that the analysis is limited to differences in amounts of formal schooling received by the adult population (25 and over). Although most adults have completed their education by age 25, some are still enrolled in school, but the effect of the education they will receive will have very little measurable effect on the level of the total adult group and, thus, little effect on the comparisons presented below.

Despite the rapidly rising educational level of the population, the average attainments of many classes of the population and areas of the country differ considerably. This pattern of differentials raises two important questions: (1) Have all groups in the population been sharing in the increasing school level? (2) Have the differentials been narrowing over time? In the following pages, we will examine these questions for the sexes, racial and ethnic groups, religious denominations, urban and rural residence categories, regions of the country, and states. For most of the comparisons, census data for the population 25 years old and over and for persons 25 to 29 years old are analyzed separately. The statistics for the younger adults indicate fairly recent educational differentials while those for persons 25 and over describe differentials in the adult population as a whole, a high proportion of whom received their schooling in the more distant past. Because of data restrictions, many of the comparisons relate to different time periods, but the trends in differentials should be revealed by these data.

Men and Women

A significant feature of the American educational system is that, unlike many foreign systems, opportunities for schooling are almost equal for both sexes. Moreover, this equality in educational opportunity goes back many years in the country's history.[43] This has perhaps been less true of college education than of elementary and secondary schooling. Traditionally, college has been the training ground for professional men. Although many women have continued their schooling through teachers colleges, enrollments of girls in liberal arts colleges and universities has been on a more-limited scale. Below the college level, however, the goal of a high-school education has been extended equally to male and female, and the statistics indicate that proportionately more women than men have attained that goal.

In terms of the median or average level of educational attainment, adult women have been slightly better educated than adult men at least since 1910 and the differential appears to be widening (see Table 27). But differences in averages often are not good indications of differences in distributions and this is clearly the case with the schooling of men and

TABLE 27

Selected Measures of Educational Attainment, for the Population 25 Years Old and Over and 25 to 29 Years Old, by Sex, for the United States: Estimates for 1910, 1920, and 1930, Censuses of 1940, 1950, and 1960[1]

Age and year	Male				Female			
	Median school years completed	Percent with--			Median school years completed	Percent with --		
		Less than 5 years of school	High school 4 years or more	College 4 or more years		Less than 5 years of school	High school 4 years or more	College 4 or more years
25 YEARS AND OVER								
Estimate: 1910....	8.1	25.9	12.4	3.4	8.2	21.6	14.6	1.9
1920....	8.2	23.0	14.5	3.9	8.3	19.1	17.1	2.4
1930....	8.3	19.1	17.5	4.6	8.5	15.9	20.7	3.1
Census: 1940....	8.6	15.1	22.7	5.5	8.7	12.4	26.3	3.8
1950....	9.0	12.2	32.6	7.3	9.6	10.0	36.0	5.2
1960....	10.3	9.4	39.5	9.7	10.7	7.4	42.5	5.8
25 to 29 YEARS OLD								
Estimate: 1910....	8.2	21.2	15.7	4.1	8.4	17.3	18.5	2.6
1920....	8.4	16.7	19.2	4.9	8.5	14.6	22.1	3.4
1930....	8.7	10.6	24.6	6.5	8.9	8.9	29.1	4.5
Census: 1940....	10.1	6.9	36.0	6.9	10.5	5.0	40.1	4.9
1950....	12.0	5.4	50.6	9.6	12.1	4.0	55.0	5.9
1960....	12.3	3.4	59.7	14.4	12.3	2.2	61.7	7.8

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[1] Data for 1950 and 1960 include Alaska and Hawaii, not included in data for earlier years. Estimates for 1910, 1920, and 1930 based on retrojection of reported 1940 Census data on education by age.

Source: 1960 Census, Vol. I, U.S. Summary, table 173; 1950 Census, Vol. II, U.S. Summary, table 115.

women. As Table 27 shows, while smaller percentages of adult women than men in 1960 lacked a fifth-grade education and larger percentages of women completed high school, men were far more likely to have been college graduates. More detailed statistics show that adult women in 1960 exceeded their male counterparts in completion of each level of schooling through the last year of high school, but larger percentages of men were found at each level beginning with the first year of college. Interestingly enough, a slightly higher proportion of women than men had completed exactly one-to-three years of college but proportionately more men had gotten college degrees or had gone on to complete some graduate or professional schooling.

Among the youngest adult age group, persons 25-to-29 years old, the educational distributions of men and women in 1960 differed in the same way as among the total adult group, with a couple of exceptions. First, the median number of school years completed was the same for males and females even though their educational distributions varied characteristically. Second, the differential by sex in college attainment was much greater than observed for the total adult group, to the extent that even higher percentages of men than women had completed exactly one-to-three years of college.

For both the 25 and over and 25-to-29 age groups, the reduction between 1910 and 1960 in the percentage of persons with less than five years of school was sharper for men than women, resulting in some narrowing of the differential at that educational level. The differential favoring women at the high-school graduation level, for both the total and youngest groups of adults, widened somewhat during the first few decades after 1910 and then narrowed again, so that by 1960 the differential was only slightly greater than it had been in 1910 for all adults and slightly smaller than it had been at that date for young adults. At the college graduation level, the differential by sex has continued to widen, especially for the young adults. While there has been a substantial increase over the years in the relative numbers of women completing college, the increase has been still greater for men.

Some insight into the dynamic factors producing educational differentials between men and women can be gained by examination of data available on the schooling of 20-to-24 year-old males and females in 1960 according to the educational attainment of their fathers.[44] About 68 percent of the men and 70 percent of the women were high-school graduates, but 35 percent of the men and 25 percent of the women had attended college at some time. Among those whose fathers had not completed high school, 57 percent of the men and 62 percent of the women were high-school graduates, and 23 percent of the men but 14 percent of the women had attended college, similar to the total pattern. Among those whose fathers had graduated from high school, 92 percent of the males and 91 percent of the females were high-school graduates, but 65 percent of the former and 52 percent of the latter had some college. Where the fathers had attended college, 95 percent of both the men and women were high-school graduates and 80 percent of the men and 73 percent of the women themselves had attended college. Thus, it seems that women are more likely than men to complete high school if their fathers were poorly educated but not more likely if their fathers had graduated from high school or gone on to college. The statistics also suggest that, while sons were almost twice as likely as daughters to attend college, a daughter's chances of attending college tended to be relatively more like a son's if her father was well-schooled. These findings support a widely-held assumption that, among lower status families, college attendance is most often based on economic motives whereas, among higher status families, going to college, particularly for girls, is a status-enhancing practice and is often based on social motives.

Whites and Nonwhites

The strong efforts made in recent years to equalize educational opportunity and educational achievement among the races in this country have come after many decades of substantial improvement in the educational status of the population, white and nonwhite. From the viewpoint of attempts to equalize the educational attainment of racial groups, an important question is: "What have been the relative educational gains of the white and nonwhite populations, and has the color gap in educational attainment been closing?"

From the data in Table 28, we can see that there was a slight narrowing of the color differential in the median years of school completed between 1940 and 1960 for the total adult population. During the same time, however, an extremely sharp reduction of the differential in the percent with less than five years of schooling took place while a widening of the differentials favoring whites at the high-school and college graduation levels occurred. The reduced differential in the median can thus be accounted for largely by substantially greater reductions for nonwhites at low levels of education, with the result that proportionately more nonwhites than whites passed the median level established earlier by their group. The median for nonwhites had been 5.8 in 1940 compared to the median of 8.7 for whites at that time, so that the median for nonwhites could have been raised by net movement into the upper elementary grades while that for whites had to be raised by gains in high-school attainment. By 1960, the median for the nonwhite adult group still stood at only 8.2 whereas the median for white adults had risen to 10.8. With few exceptions, the pattern of change observed for both sexes in the country as a whole held for males and females in each major region of the country.

The results of recent educational efforts can better be studied by looking at data for persons 25-to-29 years old. These data, for 1920, 1940, and 1960, are also shown in Table 28 and are graphically portrayed in Figure 7. The forty-year reduction in the percent of nonwhites in this age group with less than five years of schooling was appreciable, from 45 percent in 1920 down to seven percent in 1960. During the same period, the corresponding percentage for whites declined from 13 to two percent. This reduction in the differential was continuous over the three points in time for which data are shown. At the high-school graduation level, on the other hand, the color differential among young adults widened considerably between 1920 and 1940 and narrowed again only slightly between 1940 and 1960. By the latter date, 64 percent of the whites and 39 percent of the nonwhites were high-school graduates. Although there were increases for both white and nonwhite young adults in the college graduation rate, the percentage-point difference favoring the whites continued to get larger between 1920 and 1960. Comparisons of the color groups over time show the nature of the

TABLE 28

Selected Measures of Educational Attainment, for the Population 25 Years Old and Over for 1940 and 1960, and 25 to 29 Years Old for 1920, 1940, and 1960, by Color[1]

Age, color, and year	Median school years completed	Percent with--		
		Less than 5 years of school	High School 4 years or more	College 4 or more years
25 YEARS AND OVER				
White: 1940.........	8.7	10.9	26.1	4.9
1960.........	10.8	6.7	43.2	8.1
Nonwhite: 1940........	5.8	41.8	7.7	1.3
1960.........	8.2	23.5	21.8	3.5
25 to 29 YEARS OLD				
White: 1920[2]........	8.5	12.9	22.0	4.5
1940.........	10.7	3.4	41.2	6.4
1960.........	12.3	2.2	63.7	11.8
Nonwhite: 1920[2].......	5.4	44.6	6.3	1.2
1940........	7.0	27.0	12.3	1.6
1960........	10.8	7.2	38.6	5.4

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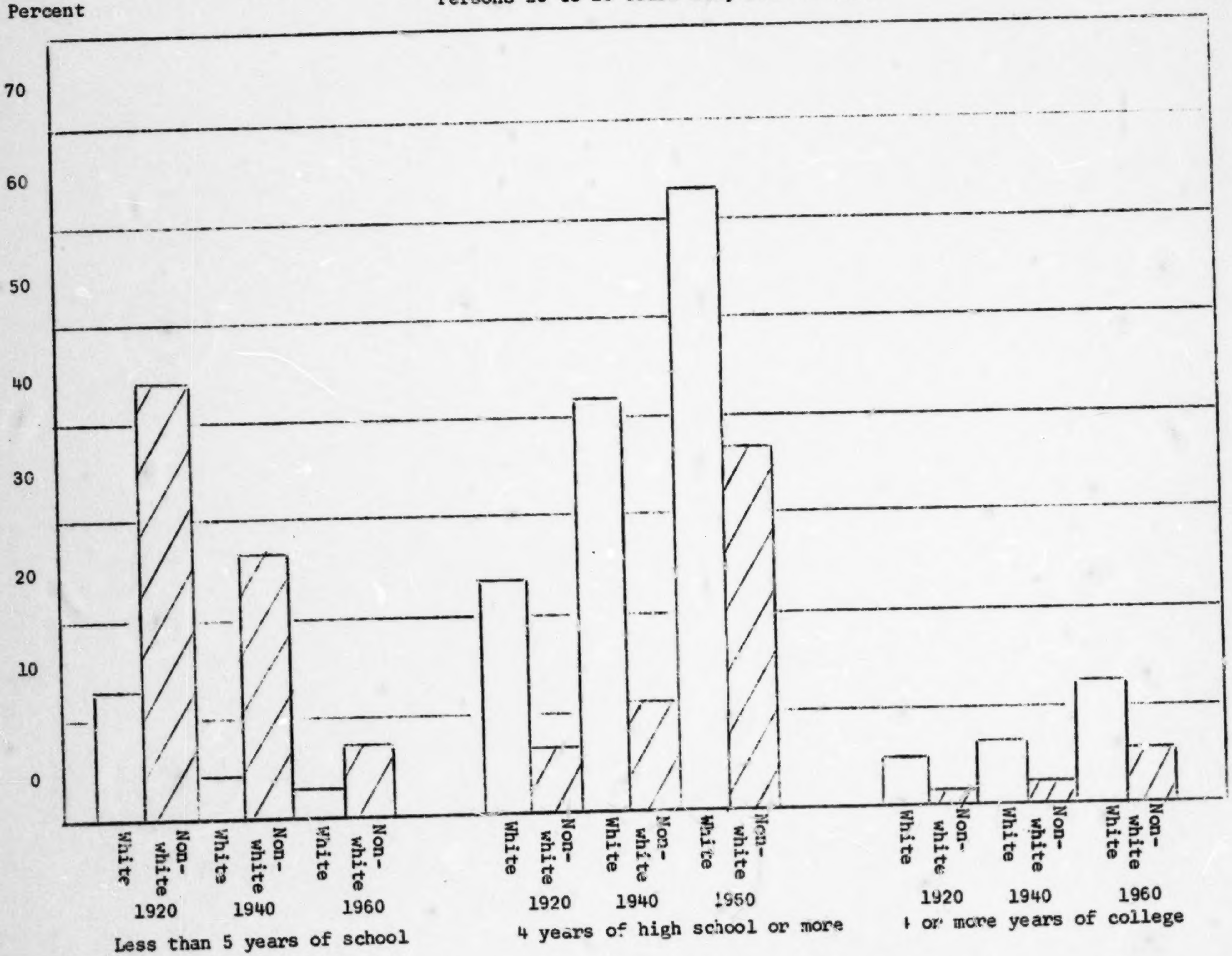
[1] Data for 1960 include Alaska and Hawaii, not included in data for earlier years.

[2] Based on reports for persons 45 to 49 years old in 1940, who generally would have been 25 to 29 years old in 1920.

Sources: 1940 Census, Vol. IV, U. S. Summary, table 18; 1960 Census Vol. I, U.S. Summary, table 173.

Figure 7--Selected Measures of Educational Attainment for White and Nonwhite Persons 25 to 29 Years Old, 1920 to 1960



lag in nonwhite education. Among these 25-to-29 year-olds, the percentage without a fifth-grade education reached by nonwhites in 1960 had been reached by whites about 1930. The percentage of the nonwhite group in 1960 that had finished high school, and the percentage holding college degrees, were the percentages attained by the white group prior to 1940. It probably will not, however, take young nonwhite adults another twenty years or more to reach the educational level of whites in 1960.

It may be instructive to take a look at father-son education data for whites and nonwhites. Among the group of men 25 to 64 years old in 1962, 45 percent of the white fathers and 14 percent of the white sons lacked an eighth-grade education while 72 percent of the nonwhite fathers and 40 percent of the nonwhite sons were in that category, a generational difference of a little over 30 percentage points for each color group. About 20 percent of the white fathers and 53 percent of the white sons were high-school graduates whereas nine percent of the nonwhite fathers and 26 percent of the nonwhite sons had completed high school, a generational difference of 33 percentage points for whites but only 18 percentage points for nonwhites. Completion of one or more years of college was attained by eight percent of the white fathers and 24 percent of the white sons as compared with four percent of the nonwhite fathers and 10 percent of the nonwhite sons, a difference of 16 percentage points between the generations for whites and six percentage points for nonwhites.

It thus appears that not only has the nonwhite population been more poorly educated than the white population but their net movement into higher levels of education, as calculated from educational differences in the fathers' and sons' generations, has lagged behind that of the whites. In these terms, it is suggested that nonwhites have been less upwardly mobile educationally than white persons. These conclusions are reinforced when the same type of data are examined by age. Generational gains at the high-school and college level were greater for whites than nonwhites in every age group, and in fact seemed to be slightly greater for whites at younger than at older ages.

From the generational education data just discussed, one can determine how much of the overall educational difference between white and nonwhite men can be explained statistically by the poorer educational attainment of the fathers of the nonwhite men and associated socioeconomic factors and how much by the poorer educational experience of the nonwhite men themselves, even when the effect of educational differences in the fathers' generation is removed. Both factors appear to have important influences. Because of the high correlation between a father's education and that of his son, the educational distribution of the fathers is a potent factor in accounting for the educational distribution of the sons. Among men 25-to-64 years old, the percentage of fathers who had not completed the eighth grade was three-fifths again higher for nonwhites than whites, the percentage who had finished high school was more than twice as high for whites, and the percentage with college degrees was exactly twice as high for whites as nonwhites. On the other hand, within each category of father's education, and for every age group, white men had more schooling than nonwhite men. The difference was most pronounced at the higher educational levels. In fact, among men at all ages whose fathers were college graduates, 57 percent of the whites but only 13 percent of the nonwhites themselves completed college. Such a large difference was observed among young men as well as the old.

When both factors are considered simultaneously, it is found that the greater part of the difference in the educational levels of white and nonwhite men can be explained by the higher attainment of white men even where the fathers of both color groups have had the same amount of schooling. We can illustrate this point by showing the effect of one factor on educational measures when the differential impact of the other factor is removed. For example, considering the men 25 to 64 years old, 14 percent of the whites and 40 percent of the nonwhites lacked an eighth-grade education. If we assume that there had been no difference in the attainment distributions of white and nonwhite fathers, about 33 percent of the nonwhite men would have been expected to have less than eight years of school. If we assume that the fathers' distributions still differed, but that within each category of father's education white and nonwhite sons had the same educational distribution, about 18 percent of the nonwhite men would have been expected to have failed to complete eight years of school.

If the measure of education is high-school graduation, a similar pattern emerges: 53 percent of the white men had completed high school, as compared with 26 percent of the nonwhite men; under the first set of assumed conditions the percentage for nonwhites would have been expected to be 34 percent, under the second set of assumed conditions it would have been 45 percent. In both examples, differences in the fathers distributions could explain about one-fourth of the color differential in educational attainment of men. About three-fourths of the difference remained to be explained by other factors which could account for the poorer average educational attainment of nonwhite men even when their fathers were as well educated as the fathers of white men. The factor of educational differences among white and nonwhite fathers accounted for only a minor fraction of the total educational differential of white and nonwhite men in each age group; however, it explained somewhat more variation at the younger than older ages, particularly at the lower end of the educational continuum. This was due to the fact that reductions in the color differential, especially in terms of percentages with little schooling, have been more noticeable among the sons' generation than among the fathers' generation, a concomitant of the more rapid rise in school enrollment rates in recent years.

Ethnic Groupings

The findings afforded by comparison of the white and nonwhite population may lead one to speculate about the relative educational status of specific white and nonwhite ethnic groups. How well-educated, for example, are certain European foreign stock groupings compared with various racial groups or other foreign stock groupings? Table 29 shows selected measures of educational attainment for nine such ethnic groups, and compares them with the attainment levels of third or later generation white Americans. The data are shown separately for two age groups, persons 45 to 64 years old and those 25 to 34 years old. Differences in schooling between the two age groups provide a general indication of educational change.

At the older age group, the Northern or Western European and Central or Eastern European foreign stock groupings compared favorably with the third

Table 29

Selected Measures of Educational Attainment for Specified Ethnic Groups 25 to 34 Years Old and 45 to 64 Years Old, by Sex, for the United States: 1960

ETHNIC GROUPING	25 to 34 years old-percent with--			45 to 64 years old-percent with--		
	Less than 5 years of school	High school 4 or more years	College 1 or more years	Less than 5 years of school	High school 4 or more years	College 1 or more years
Male						
Native white of native parentage..............	10	59	27	24	34	16
Northern or Western European fgn. stock....	4	67	35	17	33	16
Central or Eastern European fgn. stock....	5	68	21	25	32	18
Southern European fgn. stock............	10	54	23	39	18	8
Mexican, Central, or So. American fgn. stock	39	31	15	63	16	7
Puerto Rican stock.......	42	20	6	59	11	5
Negro....................	30	30	11	64	11	5
American Indian..........	35	24	8	54	14	5
Japanese.................	2	82	40	26	38	15
Chinese..................	11	71	51	53	25	13
Female						
Native white of native parentage..............	7	63	19	19	40	17
Northern or Western European fgn. stock....	3	70	22	14	37	14
Central or Eastern European fgn. stock....	4	70	22	28	28	10
Southern European fgn. stock............	8	57	11	42	14	4
Mexican, Central, or So. American fgn. stock	37	32	10	64	15	5
Puerto Rican stock.......	43	21	6	66	9	3
Negro....................	22	36	11	56	14	6
American Indian..........	34	25	6	54	15	5
Japanese.................	3	77	22	38	29	7
Chinese..................	19	64	34	53	28	14

Sources: 1960 Census, Vol. II, Part 1G, tables 19, 20, 21, and 22; Part 1D, Table 6, and Part 5B, table 1.

or later generation white Americans in educational attainment. The Negro, Puerto Rican, Latin American, and American Indian groups ranked in the lower part of the educational scale. The Japanese, Chinese, and Southern European stock held educational statuses intermittent to the other two combinations of ethnic groups, with the Japanese educational level being similar to that of the earlier generations of white Americans. At the younger adult age group, however, some reversals in the ordering of ethnic groups by amount of schooling was observed. The Japanese were clearly the best-educated among the groups, with the Northern or Western European, Central or Eastern European, and Chinese groups ranked higher than the third or later generation white Americans and the Southern European stock ranked just below the earlier native group. The Chinese in this age group, in fact, had the highest percentage of any group with one or more years of college completed.

The Puerto Ricans in the United States were at the bottom of the educational ladder in the 25-to-34 age group, and the American Indians, Latin Americans, and Negroes were next in order above them. Comparing the older and younger age groups, the Negroes appeared to have been more educationally mobile upward than the Latin American, Indian, or Puerto Rican groups.

Religious Denominations

Nationality is one cultural factor that produces differences in educational attainment; religion is another. According to survey data collected by the National Opinion Research Center in the mid-1950's,[45] Jews and Episcopalians were the best educated among household heads in the United States, and Presbyterians ranked third but significantly higher than other religious groups. Baptists, Roman Catholics, and Lutherans, among the major denominations, were among the poorest educated. The religious factor, of course, is interwoven with nationality, and the joint effect reflects the different values and attitudes toward education held by the different religions.

Geographic Regions and States

Characteristically, educational attainments have been lowest in the South and highest in the West among the four major regions of the country. This relation is found, with few exceptions, among the old and the young, among men and women, among whites and nonwhites, and for 1960 as for 1940 (see Table 30). While the period from 1940 to 1960 saw increases in the educational level of all subgroups of the population in all of the regions, the rates of increase were somewhat uneven; as a result, some regional differentials in education narrowed and others widened. The main tendency was for a narrowing at the lower end of the educational continuum but for a widening at the upper end. This pattern of change could be observed for men as well as women and for whites as well as nonwhites. At the youngest adult ages, persons 25-to-29 years old, widening of the differentials at the higher educational levels was not very pronounced; in fact, some narrowing of the differential at the high school graduation level was recorded for white males. As levels of schooling rise throughout the country and high-school completion and college attendance become more widespread, we might expect a trend toward narrowing of regional differentials at the higher-educational

Table 30

Selected Measures of Educational Attainment, for the Population 25 Years Old and 25 to 29 Years Old, by Color and Sex, for Regions: 1940 and 1960

Age, color, sex, and years of school completed	1940				1960			
	North east	North Central	South	West	North east	North Central	South	West
25 YEARS AND OVER								
Percent with less than 5 years of school								
Male - White.......	12.0	9.0	17.9	8.8	6.6	5.4	11.8	5.5
- Nonwhite....	25.5	26.0	55.0	30.2	15.1	16.7	38.0	17.9
Female - White.....	11.0	7.1	13.5	6.5	6.6	4.3	8.4	4.2
- Nonwhite..	20.1	20.5	44.1	28.6	11.1	11.4	26.3	13.8
Percent with 4 years of high school or more								
Male - White.......	23.5	23.2	22.4	32.2	40.9	40.7	38.1	50.0
- Nonwhite....	11.2	11.6	4.4	17.7	25.7	23.8	13.2	35.6
Female - White.....	25.4	27.7	26.8	38.8	42.9	44.7	41.3	53.7
- Nonwhite..	12.1	13.6	6.3	19.5	29.2	28.2	16.6	38.9
25 to 29 YEARS OLD								
Percent with less than 5 years of school								
Male - White.......	1.7	1.4	10.0	2.2	1.8	1.5	4.5	2.4
- Nonwhite....	10.9	9.0	41.3	15.3	4.4	4.4	14.9	5.1
Female - White.....	1.7	1.1	6.8	2.0	1.7	1.0	3.2	1.4
- Nonwhite..	7.5	5.8	26.5	13.4	2.5	2.2	6.5	4.9
Percent with 4 years of high school or more								
Male - White.......	38.2	41.6	31.2	51.1	63.8	64.7	56.7	67.4
- Nonwhite....	17.7	21.6	6.6	30.8	40.9	39.9	27.0	58.4
Female - White.....	40.0	47.0	37.4	56.9	67.9	68.0	57.0	67.7
- Nonwhite..	19.7	23.8	10.4	35.4	46.6	44.9	32.3	59.0

Sources: 1940 Census, Vol. IV, U.S. Summary, table 39; 1960 Census, Vol. I, U.S. Summary, table 241.

levels.

Table 31 indicates that regions are not entirely homogeneous with regard to the educational status of the population. If data for states are examined, some variation in educational attainment within the regions are found. Furthermore, between 1940 and 1960 rates of change for the states were different enough to cause changes in the rank order of states according to years of schooling completed by the people. Using completion of high school as the measure of education, we find that the New England states, and particularly Massachusetts, have ranked above the other states in the Northeast region. Among young adults in 1960, however, the percent finishing high school was higher in New Jersey, Pennsylvania, and New York than in the New England states except for Massachusetts and Connecticut. In the North Central states, Nebraska, Kansas, Iowa, and Minnesota, all in the western part of the regional grouping, exceeded other states in the region in percentage of high-school graduates. Among 25-to-29 year-olds in 1960, Nebraska ranked first in completion of high school, and Minnesota, Iowa, Kansas, and Wisconsin ranked in the first ten states in the country. States in the South largely held their low positions between 1940 and 1960 in the hierarchical ordering of states by percentage completing high school. The District of Columbia, whose racial composition has changed drastically during the twenty-year period, from 28 percent nonwhite in 1940 to 55 percent in 1960, dropped considerably down the list of areas. The western region of the United States includes one state with a constantly high educational record (Utah), a number of other states which rank in the top ten states in terms of percentages completing high school, and a couple of states (New Mexico and Arizona) whose attainment levels place them much below the rest of the states in the West. The figures in the table for persons 25-to-29 years-old in 1960 suggest that in several of the Western States educational attainments are not increasing at the rate observed for many states in the country, and consequently the ranks for these Western States have been lowered. (See Table 32). It should be noted that all of the changes described are due not only to different rates of improvement in the output of the school systems but also to educational selectivity in migration between states.[46]

Urban and Rural Areas

To a great extent, regional and state variations in educational attainment can be attributed to differences in the urban-rural composition of the areas. Styles of living associated with urban, rural nonfarm, and rural farm areas are quite distinctive and are related to dissimilarities in adequacies of the school systems and in attitudes toward education. By 1960, for example, seven percent of urban adults, 11 percent of rural nonfarm adults, and 12 percent of rural farm adults had less than five years of schooling. Among the youngest adults these percentages were two, four, and seven, for urban, rural nonfarm and rural farm persons, respectively. For both age groupings, these differentials tended to narrow between 1940 and 1960, although a slight widening between the rural nonfarm and farm rates for all adults was observed. In terms of high-school graduation, percentages in 1960 for the three residence groups stood at 44, 35, and 29 for adults as a whole, and 64, 55, and 51 among the young adults. Here again one could find a diminution of the differentials, except between the nonfarm and farm parts of rural areas.[47]

Table 31

Percent of the Population 25 Years Old and Over and 25 to 29 Years Old Who Were High School Graduates, by State: 1940 and 1960

Division and State	Percentage				Rank*			
	25 and over		25 to 29		25 and over		25 to 29	
	1940	1960	1940	1960	1940	1960	1940	1960
NEW ENGLAND:								
Maine............	28.8	43.3	44.2	58.2	15	15	18.5	32
New Hampshire....	26.8	42.9	41.6	62.8	18	21	22	24
Vermont..........	27.9	42.8	42.8	60.4	17	17	20	31
Massachussets....	31.0	47.0	48.5	68.5	9	13	12	11
Rhode Island.....	21.1	35.0	32.4	56.0	38.5	39	36	37
Connecticut......	25.1	43.9	38.1	66.0	22	17.5	28	17
MIDDLE ATLANTIC:								
New York.........	23.4	40.8	38.3	63.3	31	29	27	22
New Jersey.......	23.0	40.7	34.9	63.9	32	30	33	18
Pennsylvania.....	21.2	38.1	35.0	63.5	37	36	32	19.5
EAST NORTH CENTRAL:								
Ohio.............	25.7	42.0	45.2	61.2	20	30	16	28
Indiana..........	24.8	41.8	46.2	60.7	24	26	15	30
Illinois.........	24.3	40.4	40.9	63.5	28	32	24	19.5
Michigan.........	24.7	40.9	41.0	62.1	25.5	28	23	26
Wisconsin........	22.4	41.6	41.7	69.3	34	20	21	8
WEST NORTH CENTRAL:								
Minnesota........	25.1	43.9	44.2	72.3	22	17.5	18.5	3
Iowa.............	28.9	46.3	52.1	72.1	13.5	14	7	4
Missouri.........	22.2	36.6	36.8	61.4	35	38	30	27
North Dakota.....	22.5	38.9	38.4	63.2	33	35	26	23
South Dakota.....	25.1	42.1	44.7	66.3	22	24	17	15.5
Nebraska.........	28.9	47.7	51.6	73.2	13.5	12	10	1.5
Kansas...........	28.5	48.2	51.7	71.1	16	16	9	5

Table 31 (Continued)

Division and State	Percentage				Rank*			
	25 and over		25 to 29		25 and over		25 to 29	
	1940	1960	1940	1960	1940	1960	1940	1960
SOUTH ATLANTIC:								
Delaware.........	23.9	43.4	36.5	62.4	29	29	31	25
Maryland.........	21.1	40.0	32.2	56.4	38.5	38	37	34
Dist. of Columbia	41.2	47.8	53.2	61.1	1	1.5	6	29
Virginia.........	21.6	37.9	28.7	52.7	36	37	40	39
West Virginia....	17.8	30.5	28.9	51.1	43	43	39	40
North Carolina...	19.0	32.3	25.2	48.3	40	40.5	43.5	43.5
South Carolina...	18.4	30.4	22.5	43.2	41	45	45	49
Georgia..........	17.4	31.9	21.9	47.6	45	42	47	46
Florida..........	26.6	42.6	30.5	56.1	19	23	38	35.5
EAST SOUTH CENTRAL:								
Kentucky.........	15.7	27.6	25.2	44.2	48	49	43.5	47.5
Tennessee........	18.1	30.4	25.4	47.7	42	45	42	45
Alabama..........	15.9	30.4	21.3	48.5	47	45	49	42
Mississippi......	16.2	29.8	21.6	44.2	46	47	48	47.5
WEST SOUTH CENTRAL:								
Arkansas.........	15.1	28.9	22.1	48.3	49	48	46	43.5
Louisiana........	17.6	32.3	25.6	49.8	44	40.5	41	41
Oklahoma.........	24.5	40.5	39.4	63.4	27	31	25	21
Texas............	24.7	39.6	34.3	56.1	25.5	26	34	35.5
MOUNTAIN:								
Montana..........	29.4	47.8	48.2	67.3	11.5	10.5	14	12
Idaho............	30.5	48.6	49.7	66.3	10	7	11	15.5
Wyoming..........	32.9	52.1	51.9	69.2	7	3	8	9
Colorado.........	32.1	52.0	48.3	69.4	8	4	13	7
New Mexico.......	23.8	45.4	34.0	57.1	30	30	35	33
Arizona..........	29.4	45.7	37.9	55.5	11.5	15	29	38
Utah.............	37.0	55.8	58.6	73.2	3	1	1	1.5
Nevada...........	35.6	53.3	55.0	66.4	4	2	4	14
PACIFIC:								
Washington.......	33.6	51.5	56.3	70.5	5	5.5	2	6
Oregon...........	33.1	48.4	54.3	69.1	6	8	5	10
California.......	37.3	51.5	55.6	66.6	2	5.5	3	13
Alaska...........	26.6	54.7	NA	61.8	*	*	*	*
Hawaii...........	20.5	46.1	NA	71.6	*	*	*	*

*Ranks do not include Alaska and Hawaii since some data for these States are lacking.

Sources: 1940 Census, Vol. IV, table 13 for each State; 1960 Census, Vol. I, table 103 for each State.

Table 32

Selected Measures of Educational Attainment, for the Population 25 Years Old and Over and 25 to 29 Years Old, by Urban and Rural Residence, for the United States: 1940 and 1960[1]

Years of school completed and residence	25 years and over		25 to 29 years old	
	1940	1960	1940	1960
Percent with less than 5 years of school				
Urban	11.4	7.3	3.3	2.1
Rural nonfarm	13.9	10.9	6.9	4.1
Rural farm	20.6	11.5	13.5	6.7
Percent with 4 years of high school or more				
Urban	28.8	44.2	43.8	63.8
Rural nonfarm	23.3	34.5	35.7	54.6
Rural farm	12.4	29.4	22.3	51.4

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[1] Data for 1960 include Alaska and Hawaii, not included in data for 1940.

Sources: 1940 Census, Vol. IV, U.S. Summary, table 18; 1960 Census, Vol.I, U.S. Summary, table 173.

Distributional Inequalities in Education and Other Socioeconomic Resources

One way of summarizing the pattern of educational differentials among subgroups of the population is to compute the percentage of the aggregate years of schooling held by given percentages of the best educated or poorest educated in the population.[48] These figures are shown for men in Table 33.

For the country as a whole, more equal distributions of educational attainment are observed at the younger ages. Among men 75 years old and over, the most poorly-educated third of the population had 13 percent of the aggregate years of schooling; at ages 45-to-49, it was 20 percent; and at ages 25-to-29, it was as high as 22 percent, although still a considerable distance from the 33 percent that would indicate distributional equality. Within the different age groups, variations are found for the different subgroups. Among the oldest nonwhite men in the rural-farm parts of the South, the most poorly-educated third had only three percent of the aggregate educational attainment. Considering the men 25-to-29 years old, the percentage of aggregate education possessed by the best-educated third of the population was 49 percent among nonwhites in the South as a whole, 50 percent among North Carolina nonwhites and 53 percent among Mississippi nonwhites. Overall, educational inequalities seem to be declining but, even among our recently-educated population, inequalities are yet substantial. The distribution for 25-to-29 year-old rural-farm nonwhites in the South in 1960 was the same as that for men 75 and over in the country at large.

Compared with other socioeconomic resources, however, education seems to be the most equally distributed of all such goods. Six specific socioeconomic "resources" (occupational status, family income, net worth, health expenditures, value of own homes, and gross rent of rented homes) are shown distributed by aggregate amounts of the resource in various population sectors in Table 33. The units for which these resources are reported vary but generally refer to families or households. No family or household measure of educational attainment has been devised, but a close approximation probably can be obtained by referring to the attainment distribution for men 45-to-49 years old. Only the distribution of rental values comes near the equality of years of schooling. If rental and owned-home values were combined to get a universal measure of housing status, the distribution would be less equal than that for education. Occupational status and family income, two socioeconomic items most closely associated with education, are found to be distributed in the population far more unequally, and health expenditures and net worth have a distinctly uneven aggregate distribution when compared with years of schooling.

TABLE 33

Distributional Inequalities in Years of Schooling and in Other Socioeconomic Resources: Circa 1960

Item	Percentage of aggregate amount of resource in a given population that is possessed by:			
	Lowest 5 percent of population	Lowest 33 percent of population	Highest 33 percent of population	Highest 5 percent of population
YEARS OF SCHOOLING				
Men 25 to 29				
United States	1	22	43	8
Urban	2	23	43	7
Rural nonfarm	1	21	43	8
Rural farm	1	20	44	8
Northeast	2	23	43	7
North Central	2	24	42	8
South-total	1	20	45	8
South-nonwhite	1	17	49	9
South-rural farm nonwhite	*	14	54	10
North Carolina-total	1	19	46	8
North Carolina-nonwhite	1	16	50	10
Mississippi-total	1	18	47	8
Mississippi-nonwhite	*	15	53	11
Iowa	2	25	41	7
Men 45 to 49				
United States	1	20	46	9
South-rural farm nonwhite	*	11	57	13
Men 75 and over				
United States	*	13	53	12
South-rural farm nonwhite	*	3	69	18
Mississippi-rural farm nonwhite	*	3	69	17
OTHER RESOURCES				
Occupational status[1]	*	12	54	10
Family income[2]	*	12	58	13
Net worth[3]	*	1	81	27
Health expenditures[4]	*	5	75	27
Value of owned home[5]	1	14	56	14
Gross rent of rented home[6]	1	19	50	11

* Less than 0.5 percent

(Footnotes and source notes, see following page)

TABLE 33--(Continued)

Data for men in the experienced civilian labor force in 1950. Occupational weights are those cited in Bureau of the Census Working Paper.No. 15, *Methodology and Scores of Socioeconomic Status.*

Data on income in 1959 for family units in 1960.

Data for spending units in 1953.

Data for family units in 1957-58.

Data for owner-occupied housing units in 1960.

Data for renter-occupied housing units in 1960 where cash rent is paid.

Sources: 1960 Census of Population, Vol. I, U. S. Summary and selected State reports; 1953 Survey of Consumer Finances, *Federal Researve Buttetin*, 1953, Supplementary table 5, p. 11; Odin W. Anderson, Patricia Collette, and Jacob J. Feldman, *Family Expenditure Patterns for Personal Health Services, 1953 and 1958: Nationwide Surveys*, Health Information Foundation Research Series 14, p. 21; 1960 Census of Housing, Vol. I, U.S. Summary, table 8; and records.

CHAPTER IV

The Relation of Education to the Occupational Structure

The relation of the supply of educated persons to the demand for talent in society has been of much interest in recent years.[49] It is well-known that as the economy of the United States has become more industrialized, and as gross national product has increased, the occupational structure has shifted to employ a larger percentage of professional, managerial, and white collar workers and a smaller percentage of semi-skilled and unskilled workers. At the same time, the educational level of the population has been rising rapidly, so that more persons with the necessary background are available to meet the rising demand for well-educated workers. How well are these two trends related? Have shifts in the occupational structure created demands that the educational system is unable to meet? Or has the educational output been greater than required to fill the new jobs created by the changing economy. While no precise answer can be given to this general question, a review of the trends in both attainment and occupational change, and the analysis of their relationship should increase our understanding of the relationship involved.

Educational and Occupational Trends

The long-term rise in educational attainment, deriving from continued expansion of the school systems and the extension of schooling to all groups and areas of the country, is well documented and needs only brief mention. Looking at data for men 25 to 64 years old, who closely approximate the males of labor force age, we find that, in 1910, 25 per cent of these men had less than five years of schooling; by 1960, about 7 per cent of their counterparts had that little schooling. In 1910, 13 per cent of the men were high school graduates and less than 4 per cent were college graduates; by 1960, the corresponding percentages were 44 and 11 per cent.[50] (See table 34).

This "educational revolution" had its strongest surge during the World War II and postwar periods, although improvements in educational attainment have been noted each decade at least back to 1910 (the earliest date for which estimates are available). Projections to 1980, according to Census Bureau reports, indicate that we can still expect substantial increases in the educational level of the population. The proportion of "functional illiterates" among men 25 to 64 years old may well be cut in half by that date, the percentage who are high school graduates is projected to be 62 per cent of the group at that time, and the proportion who are college graduates may reach 19 per cent.[51]

The trend in the occupational composition of the male population since the turn of the century has been one of numerical increases among white-collar occupations and among skilled, semi-skilled, and service workers. There was some increase early in the century and decrease in later decades in the number of nonfarm laborers, and a general decline in the number of persons in farm occupations. The relative occupational composition has also changed significantly.

Table 34

Educational Attainment of the Male Population 25 to 64 Years Old: 1910 to 1980

Years of School Completed	Estimated		Reported		Projected	
	1910	1920	1940	1960	1970	1980
Number (in millions)						
Total	21.2	25.1	33.1	40.6	43.9	51.3
No School years completed	1.8	1.7	1.1	0.6	0.4	0.3
Elementary:						
1 to 4 years	3.6	3.9	3.4	2.2	1.6	1.2
5 to 7 years	4.7	5.4	6.1	5.3	4.2	3.2
8 years	7.0	8.1	9.4	6.6	5.1	3.9
High School:						
1 to 3 years	1.4	2.2	5.2	8.2	9.4	10.7
4 years	1.3	1.9	4.3	9.6	12.1	15.8
College:						
1 to 3 years	0.6	0.9	1.7	3.8	4.6	6.3
4 or more years	0.7	1.0	1.9	4.3	6.5	9.9
Per Cent Distributions						
Total	100.0	100.0	100.0	100.0	100.0	100.0
No school years completed	8.2	6.8	3.4	1.5	0.9	0.6
Elementary:						
1 to 4 years	17.0	15.5	10.2	5.4	3.6	2.3
5 to 7 years	22.3	21.6	18.5	13.1	9.6	6.2
8 years	32.8	32.3	28.3	16.3	11.6	7.6
High School:						
1 to 3 years	6.8	8.7	15.6	20.2	21.4	20.9
4 years	6.3	7.5	13.1	23.6	27.6	30.8
College:						
1 to 3 years	3.0	3.5	5.2	9.3	10.5	12.3
4 or more years	3.5	4.0	5.8	10.6	14.8	19.3

Source: Data for 1910 and 1920 are estimates based on retrojection of 1940 age cohorts by education. Data for 1940 are from 1950 Census of Population, Volume I, U.S. Summary. Data for 1960 are from 1960 Census of Population, Volume I, Part 1, U.S. Summary. Projections for 1970 and 1980 are from U. S. Bureau of the Census, Current Population Reports, Series P-25, No. 305, and are based on Series B assumption at younger ages.

White-collar workers constituted 17 1/2 per cent of the male work force in 1900 and double that percentage in 1960, with the professional and technical fields expanding most rapidly during the last couple of decades. The proportions in craft, operative, and service jobs rose gradually over the decades, although they leveled off some during the last decade or so. The percentages in nonfarm laboring occupations, which were steady during the early decades of the century, dropped rapidly in later decades, while percentages in farm occupations continued the sharp drop in recent years that had already been observed at the turn of the century.[52] (See table 35).

Projections to 1975, based on Labor Department reports, indicate a general continuation of the occupational trends noted in the past. Most rapid increases can be expected in the professional and managerial fields. The proportion of white-collar jobs among men will be approaching half of the male labor force. Skilled and semi-skilled manual jobs, while increasing in number, will be a decreasing percentage of all occupations. Nonfarm labor may possibly increase slightly whereas the farm segment of the male labor force can be expected to continue to decline, both relatively and absolutely.[53]

Association of Education and Occupation

Since most persons who enter the labor force are prepared to occupy only jobs that are suitable for the amount of education they have received, and since higher levels of education are usually required for entry into higher status jobs, it is not surprising that there is a direct association between level of education and occupation. The 1960 Census shows, as did the 1940 and 1950 Censuses, that the average level of educational attainment is highest for professional and technical occupations, not quite so high for other white-collar jobs, less for skilled and semi-skilled jobs than for white-collar jobs, and lowest for farm occupations and unskilled nonfarm laborers.[54] (See table 36).

Granted that there is an association between education and occupation, however, how strong is it and is the relationship getting stronger or weaker? Because of data limitations, we have analyzed the relationship for white males 35 to 54 years old in nonfarm occupations in 1940, 1950, and 1960. (The data for 1940, in fact, are limited to native persons in the group and this probably has some effect on the results). Using gamma as a measure of association, we arrived at indexes of +.52 in 1940, +.50 in 1950, and +.39 in 1960.[55] The index for 1940 probably would have been higher if we had been able to include foreign-born persons.[56] At any rate, the results clearly show in summary fashion that the association of education and occupation has been moderate but is declining.[57] Whatever the cause for this decline, there are important implications for the analysis of educational supply and demand.

But what can we say about the factors which affect the education-occupation relationship and which help explain the declining association? Katz used one approach to arrive at the answer. He analyzed changes in educational attainment levels within occupational groups for the 1952 to 1959 period, utilizing data from the Census Bureau's Current Population Survey.[58] Computing an "expected" occupational distribution for 1959 that would have been obtained if the "demand for workers at each attainment level had remained the same in the various occupational groups as in 1952," and comparing it to the actual 1959 occupational distribution,

Table 35

Employment of Men by Major Occupation Group: 1900 to 1975

(Data for 1900 and 1920 refer to civilian gainful workers 10 years old and and over; data for 1940 refer to persons 14 years old and over in the experienced civilian labor force; data for 1960 and projections to 1975 refer to employed persons 14 years old and over)

Major Occupation Group	Estimated 1900	1920	1940	Reported 1960	Projected 1970
Numbers (in millions) Total	23.7	33.6	39.2	43.5	56.5
Professional, Technical, and kindred workers	0.8	1.3	2.3	4.7	7.9
Mgrs., officials, and propr., exc. farm	1.6	2.6	3.4	4.9	7.9
Clerical and kindred workers	0.7	1.8	2.3	3.2	4.6
Sales workers	1.1	1.5	2.5	3.1	3.6
Craftsmen, foremen, and kindred workers	3.0	5.4	6.1	8.9	10.9
Operatives and kindred workers	2.5	4.8	7.1	9.1	10.3
Service workers	0.7	1.2	2.4	2.8	4.5
Laborers, exc. farm and mine	3.5	4.7	4.7	3.1	3.6
Farmers and farm managers	5.5	6.2	5.2	2.5	1.8
Farm laborers and foremen	4.4	4.1	3.3	1.3	1.3
Per Cent Distribution Total	100.0	100.0	100.0	100.0	100.0
Professional, technical, and kindred workers	3.4	3.8	5.8	10.8	14.0
Mgrs., officials, and propr., exc. farm	6.8	7.8	8.6	11.3	14.0
Clerical and kindred workers	2.8	5.3	5.8	7.4	8.1
Sales workers	4.6	4.5	6.4	7.1	6.4
Craftsmen, foremen, and kindred workers	12.6	16.0	15.5	20.5	19.3
Operatives and kindred workers	10.4	14.4	18.0	20.9	18.2
Service workers	3.1	3.7	6.1	6.4	8.0
Laborers, exc. farm and mine	14.7	14.0	12.1	7.1	6.4
Farmers and farm managers	23.0	18.4	13.3	5.7	3.2
Farm laborers and foremen	18.7	12.1	8.4	3.0	2.3

Source: Data for 1900, 1920, and 1940 are from David L. Kaplan and M. Claire Casey, Occupational Trends in the United States, 1900 to 1950, Bureau of the Census Working Paper No. 5, Washington, D.C., 1958. Data for 1960 are from 1960 Census of Population, Volume I, Part 1, U.S. Summary. Projections for 1975 are based on unpublished data provided by the U.S. Bureau of Labor Statistics, and are consistent with projections of occupations for both sexes published in the March 1963 issue of the Monthly Labor Review.

Table 36

Percent Who have Completed Specified Levels of Schooling by Major Occupation Group: Employed Native White Males 35 to 54 Years Old in 1940, and all White Males 35 to 54 Years Old in the Experienced Civilian Labor Force in 1960

	Per Cent With Less Than 5 Years of School		Per Cent Who Are High School Graduates		Per Cent Who Completed 1 or More Years of College	
Major Occupation Group	1940	1960	1940	1960	1940	1960
Professional, technical and kindred workers	0.4	0.2	84.7	91.3	72.7	74.5
Farmers and farm managers	13.4	6.1	9.5	32.5	4.1	7.5
Mgrs. Officials, and Proprietors, exc. farm	2.2	1.0	46.7	68.0	23.5	35.4
Clerical, sales, and kindred workers	1.2	0.8	47.1	65.6	20.4	28.0
Craftsmen, foremen, and kindred workers	4.9	3.0	15.8	36.4	4.4	8.0
Operatives and kindred workers	8.1	5.7	10.9	24.9	2.9	4.0
Service workers	5.4	5.2	15.2	34.0	4.4	8.1
Farm laborers and foremen	21.2	29.2	6.3	12.1	1.9	2.7
Laborers, exc. farm and mine	13.5	12.3	7.3	17.2	2.0	2.8

Source: Data for 1940 are from the 1940 Census of Population, Special Report on Educational Attainment by Economic Characteristics and Marital Status. Data for 1960 are from 1960 Census of Population, report PC(2)-5B, Educational Attainment.

he concluded that, "The difference between the 'expected' and the actual 1959 occupational structure mainly depicts an increasing demand for better educated workers." The data and analysis presented by Katz do not, however, really answer the question: Did the "demand" rise because the supply increased, or did the "demand" really determine the supply?

Some insight into this question, and the relative strength of demand factors, can be obtained by analysis of the extent to which the rise in the educational level of workers can be accounted for by shifts in the occupational distribution. How much of the rise in the educational level of the labor force is due to shifts from jobs requiring little education to those requiring more education, and how much of it can be attributed to rises in educational attainment within occupations? The analysis is confined to employed white males 35 to 54 years old, an age group for which shifts in and out of the labor force, as well as occupational and educational changes, should be minimal. Changes from 1940 to 1960 are considered.

During this period, the group increased in size from 10.6 million to 18.5 million, and increased its median level of educational attainment from 8.5 to 11.5 years of school completed. The category grew in size about twice as fast from 1940 to 1950 as from 1950 to 1960, but educational attainment rose more rapidly in the second decade. The rise in educational attainment was subdivided into a component due to changes in occupational composition and a component due to increases in educational attainment within occupational groups.[59]

Most of the total educational change that occurred in the 1940 to 1960 period for this group, it was found, could be attributed to a rise in level of attainment within occupational groups. Overall, about 85 per cent of the rise in educational attainment may be attributed to increased educational levels within broad occupational groups, and only 15 per cent to shifts in the occupational structure from occupations requiring less to occupations requiring more education. This was true to about the same extent in the 1940 to 1950 period as in the 1950 to 1960 period, even though the labor force was expanding at a more rapid rate, relative to increases in educational attainment, during the earlier period than in the later period.

Only at the extremes of the attainment distribution, that is for college graduates and persons with no education, was as much as half the change in educational attainment attributable to shifts between occupations. At the college end of the distribution this seems to reflect the continuing "demand" for college trained personnel; at the other end of the distribution, where the changes were negative, it reflects the rapid shrinkage of jobs for persons without formal education.

It should be noted that this analysis deals with very broad occupational categories and as a result may obscure shifts within these occupational categories from occupations requiring less education to those requiring more education. For example, within the occupational group "Managers, officials, and proprietors," which has increased its educational attainment level more rapidly than other white-collar occupational categories, there was a more rapid increase in the number of salaried officials of large businesses, for whom substantial

Table 37

Components of Change in Educational Level of Employed White Males Age 35 to 54: 1940 to 1960
(Figures in 1,000's)

Time Period and Years of School Completed	Total Change in Educational Level (1)	Educational Change Due to: Change Within Occupation (2)	Shifts in Employment Between Occupations (3)	Standardization Difference (Absolute) (4)
1940-60				
No school years completed	-71	-35	-36	10
Elementary:				
1 to 4 years	-452	-291	-161	85
5 to 8 years	-4,013	-3,549	-464	3
High School:				
1 to 3 years	794	694	100	63
4 years	2,414	2,363	51	126
College:				
1 to 3 years	595	505	90	9
4 or more years	734	314	420	25
1940-50				
No school years completed	3	17	-14	3
Elementary:				
1 to 4 years	-27	54	-81	18
5 to 8 years	-1,557	-1,417	-140	40
High School:				
1 to 3 years	299	255	44	29
4 years	861	828	33	5
College:				
1 to 3 years	193	171	22	13
4 or more years	228	91	137	27

Source: Source of data for 1940 and 1960 are indicated in Table 36. Data for 1950 are from the 1950 Census of Population, Special Report on Education, Table 11.

Computation: Column (1) represents the amount of change in educational level that would have occurred if the number of males 35-54 had remained constant during the period. Decreases equal increases. Columns (2) and (3) distribute the changes into a component due to shifts in per cent employed in different occupations (column 3) and a component due to the increase in educational level within each occupational category during the period specified. (column 2). Since there is a difference in standardizing the occupational distribution on education and the educational distribution on occupation, an average of the two was used. Column 4 gives the absolute size of the difference in the two computations.

Table 37-Continued

Time Period and Years of School Completed	Total Change in Educational Level (1)	Educational Change Due to: Change Within Occupation (2)	Shifts in Employment Between Occupations (3)	Standardization Difference (Absolute) (4)
1950-60				
No school years completed	-71	-57	-14	1
Elementary:				
1 to 4 years	-415	-344	-71	16
5 to 8 years	-2,109	-1,823	-286	35
High School:				
1 to 3 years	424	404	20	13
4 years	1,360	1,321	39	53
College:				
1 to 3 years	354	288	66	1
4 or more years	457	212	245	11

Source: Source of data for 1940 and 1960 are indicated in Table 36. Data for 1950 are from the 1950 Census of Population, Special Report on Education, Table 11.

Computation: Column (1) represents the amount of change in educational level that would have occurred if the number of males 35-54 had remained constant during the period. Decreases equal increases. Columns (2) and (3) distribute the changes into a component due to shifts in per cent employed in different occupations (column 3) and a component due to the increase in educational level within each occupational category during the period specified. (Column 2). Since there is a difference in standardizing the occupational distributions on education and the educational distribution on occupation, an average of the two was used. Column 4 gives the absolute size of the difference in the two computations.

education is required, than in the number of self-employed proprietors of retail establishments, for whom formal education is less important. Even if we had a more detailed classification of occupations, the within-occupation component of the increase in educational attainment would probably be substantial.[60] These data undoubtedly overstate the amount of flexibility in educational requirements because the occupational categories are so broad, but they also indicate that the educational levels of workers in various occupations do change, and they reflect the "supply" of persons as well as the occupational demand. How much of the change reflects increased skill requirements for specific occupations and how much is due to the availability of better-educated persons for the same jobs is still a question, but the latter factor would seem to be much more important.[61]

This analysis indicates the inadequacy of formulations of the relation of jobs and educational attainment as a simple matter of economic supply and demand. Educational attainment within the broad occupational categories of the census has increased substantially for most occupations in the last two decades. In addition, the improvement in educational attainment within occupations is a much more important factor in the rise in the educational level of workers than the change in the occupational structure of the labor force.

Our data also indicate that there has been a decline in the strength of the relationship between educational attainment and occupation in the last two decades.[62] It appears that this declining relation is likely to continue in the future. The educational upgrading of the population will very likely continue to be more rapid than the shift in the occupational structure. Increasingly, the future supply of educated persons may make the gross level of educational attainment a necessary, but not a sufficient condition for occupational entry.

This analysis focuses attention on at least two questions for further research: First, if formal schooling itself will account for less of the variation in occupational choice in the future than at present, it will become increasingly important to identify and measure the effect of other factors. A person's level of ability, his social origins, and which schools he attends and his level of performance within them, may become more important than the mere fact of attendance or graduation. Such information is not available from census studies, but it may need to be collected along with other census information in order to explain such changing relationships as those of education to occupation.

The second problem for research is the further study of the importance of the economic motive in school and college attendance. How will the declining relation of educational attainment to occupational entry be perceived by youth and their parents? Will this affect the rising level of educational expectations? How will such influences be manifested? Answers to these questions are important to both a better theoretical understanding of the way educational institutions affect the sorting of persons into occupations and to the practical planning problems faced by educators, businessmen, and other administrators.

Table 38

Per Cent of Change in Educational Attainment Attributable to Changes in Occupational Structure for Employed White Males 35 to 54 Years Old: 1940 to 1960

Years of School Completed	Period 1940-60	 1940-50	 1950-60
No school years completed	51	45	20
Elementary:			
1 to 4 years	36	60	17
5 to 8 years	12	9	14
High School:			
1 to 3 years	13	15	5
4 years	2	4	3
College:			
1 to 3 years	15	11	19
4 or more years	57	60	54

Source: Table 37

Computation: Column (3) of Table 37 divided by the sum of Columns (2) and (3) without regard to sign.

FOOTNOTES

[1] Comparison of 1900 census figures with those for 1890 and for 1910 indicates a substantial undercount of persons enrolled in school. For this reason, most of the discussion and statistics on school progress in the 20th Century will use the 1910 census as the base.

[2] See Martin Trow, "The Second Transformation of American Secondary Education," International Journal of Comp. Sociology. II, No. 2 (Sept. 1961), 144-166.

[3] For a statement about universal higher education as a goal see: Universal Opportunity for Education Beyond the High School. Ed. Policies Commission, National Education Association, 1964.

[4] Strayer, George. Age and Grade Census of Schools and Colleges. Bulletin O.E. (1911), No. 5.

[5] Strayer, op. cit., p. 135.

[6] Phillips, Frank. An Age Grade Study in 900 City School Systems. U. S. Office of Education. Statistical Circular No. 8 (May, 1927).

[7] There may be a practical upper limit on the amount of retardation somewhere between 50 and 75 percent. In any community or neighborhood group where retardation reaches these proportions, dropping out of school is probably sanctioned for the retarded student. The difficulties of operating schools with such a large proportion of retarded pupils suggests that school officials probably would see dropouts as a "reasonable" solution to their problems. If these speculations have validity, the American public school system between 1900 and 1930 was probably operating with a near maximum "load" of retarded pupils.

[8] The age grade table in 1940 was prepared from the question "what was the highest grade of school completed." For persons enrolled in school, it was assumed that they would be in the next higher grade. However, internal evidence indicates that many people gave the grade in which the student was current enrolled as the highest grade completed. There is no satisfactory way to adjust this data so that it is comparable with the 1950 and 1960 census materials on the subject. On the basis of comparison with the Office of Education Grade Enrollment data, net overreporting of grade enrolled in 1940 was about two-thirds of a grade, with improved question wording, the net overreporting was reduced to about .2 of a grade in 1950.

[9] Two years are defined as "normal" for each grade. Thus both six and seven year olds in the first grade at the time of the census are considered normal. Seven and eight year olds in the second grade are normal, and similarly for other grades.

[10] Dael Wolfle, America's Resources of Specialized Talent (New York: Harper and Brothers, 1954), p. 140.

[11] The regular censuses and surveys of the Bureau of the Census gather data on the school and college enrollment and educational attainment of the population, but on occasions special surveys have obtained data on ability and other factors related to high school graduation and college entrance.

[12] In October of the year, the percent enrolled at age 5 is much less because many children at this age are too young to meet the entrance requirements for elementary school when school begins.

[13] R. A. Tesseneer and L. M. Tesseneer, "Review of the Literature on School Dropouts," Bulletin of the National Association of Secondary School Districts, 42 (May, 1958).

[14] Jacob Shiffman, "Employment of High School Graduates and Dropouts in 1962," Monthly Labor Review (July, 1963).

[15] See R. A. Tesseneer and L. M. Tesseneer, *op. cit.*, for a general discussion of these points.

[16] This group includes youths who never went to school or who dropped out in the elementary grades, as well as those who dropped out in high school.

[17] Data are for children living with both parents in 1960. Census data are not available on the education of parents no longer living or not residing with their children.

[18] Data are for children living with one or both parents in 1960.

[19] Data are for children having an employed father with whom they are living. Not included are children whose fathers are either no longer living, not residing with them, or living with them but not employed.

[20] Moreover, the ethnic groups with poorer educational experience had already had higher attrition rates before the fifth grade, so that ethnic differentials in attainment of some high school was even greater than indicated by the statistics just cited.

[21] Most studies in which intelligence or aptitude has been related to dropping out of school show dropouts to be more selective of the less able, but there is considerable variance in reports of the extent of the difference in ability between dropouts and graduates. See Tesseneer, *op. cit.*

[22] See Tesseneer, *op. cit.*

[23] *Ibid.*

[24] For a discussion of the lower-class dropout and the middle-class values of the American school system, see Edgar Z. Friedenberg, "An Ideology of School Withdrawal," in Daniel Schrieber (ed.), The School Dropout (Washington: National Education Association, 1963).

[25] Jacob Shiffman, *op. cit.*

[26] To some extent scholastic retardation is also a function of age at beginning school; however, the method of measurement used (which identifies a person as retarded if he is enrolled below the two-grade mode) largely takes into consideration the variation in age at school entrance.

[27] James D. Cowhig and Charles B. Nam, "Educational Status, College Plans, and Occupational Status of Farm and Nonfarm Youths: October 1959," Series Census ERS (P-27), No. 30, table 6.

[28] See ibid. for a more detailed discussion and data.

[29] Charles B. Nam and James D. Cowhig, "Factors Related to College Attendance of Farm and Nonfarm High School Graduates: 1960," Series Census-ERS (P-27), No. 32, table 6. These results are in close agreement with those of a 1955 study of public high school students. See Background Factors Relating to College Plans and College Enrollment Among Public High School Students (Princeton, New Jersey: Educational Testing Service, 1957).

[30] See Allison Davis, Social Class Influence Upon Learning (Cambridge, Mass.: Harvard University Press, 1950). Some persons have argued for dropping these tests as bases for placing and rating students; others have argued for their continued use but on a more discriminating basis and in conjunction with other information about the students.

[31] U. S. Bureau of the Census, Current Population Reports, Series P-20, No. 110, "School Enrollment, and Education of Young Adults and Their Fathers, 1960."

[32] The low correlation between college attendance and color can be explained by the fact that a greater proportion of nonwhites than whites who drop out of school do so before becoming college age; hence, nonwhites who graduate from high school tend to be much like whites with regard to measured ability and socioeconomic background.

[33] Since some of these factors are partly reflected in the variables included in the correlation analysis, it is difficult to believe that they can account for much of the explained variance in studies of social phenomena suggests possible methodological weaknesses in the approach. Perhaps more stress should be put on the relative importance of the variables measured than on the measured magnitude of each effect.

[34] The authors are grateful to A. J. Jaffe who sponsored this aspect of the 1959-60 survey.

[35] Home State and Migration of American College Students, Fall 1958, American Association of Collegiate Registrars and Admissions Officers, March 1959.

[36] The Survey question called for the major reason where there was more than one reason. The major reason reported by the respondent in some cases may not have been the primary or underlying reason.

[37] Wolfle, op. cit., p. 160.

[38] Cowhig and Nam, op. cit.

[39] The survey data showed that "taking a job" did not necessarily represent an economic restraint, since that reason for not attending college was given by a larger proportion of students in families with incomes of $5,000 or more than in families with lower incomes.

[40] For a report on marriage trends of college students as revealed by several localized studies, see Nahum Medalia, "Explaining the Increase in College Student Marriage," paper presented at the annual meeting of the Eastern Sociological Society, April 1964.

[41] It has been found that costs are higher for full-time than part-time students, for those living at college rather than at home, for those attending private rather than public colleges, and for those attending a university rather than a junior college or liberal arts college. See John B. Lansing, Thomas Lorimer, and Chikashi Moriguchi, How People Pay for College, Survey Research Center, The University of Michigan, 1960, p. 18.

[42] Cowhig and Nam, op. cit., pp. 4-5.

[43] There have been exceptional periods of time, such as the post-World War II period when favoritism in college entrance was generally given male war veterans.

[44] These data, some of which are unpublished, were obtained in connection with the October 1960 Current Population Survey.

[45] These data were cited in Donald J. Bogue, The Population of the United States (Glencoe, Illinois: The Free Press, 1959), pp. 700-702.

[46] Discussion of this factor is taken up in the next section of this chapter.

[47] Census definitions of types of residence were changed somewhat between 1940 and 1960; hence, historical comparability may be affected. The extent of the net effect is not known, but the maintenance of rural nonfarm-farm differentials may be a function of definitional changes which based the farm definition on more rigorous criteria than before.

[48] This technique of measuring distributional inequalities in education was developed by C. Arnold Anderson and illustrated with 1950 Census data in his article, "Inequalities in Schooling in the South," The American Journal of Sociology, 60:6 (May 1955), pp. 557-560.

[49] For example: Seymour Harris, The Market for College Graduates (Cambridge, Mass., Harvard University Press, 1949; David Blank and George Stigler, The Demand and Supply of Scientific Personnel (New York: National Bureau of Economic Research, 1957); Robert J. Havighurst, American Higher Education in the 1960's (Columbus, Ohio: Ohio State University Press, 1960).

[50] The estimates for 1910 were prepared in connection with the authors' forthcoming census monograph on Education of the American Population.

[51] U. S. Bureau of the Census, Current Population Reports, Series P-25, No. 305, "Projections of Educational Attainment in the United States, 1965 to 1985."

[52] David L. Kaplan and M. Claire Casey, Bureau of the Census Working Paper No. 5, Occupational Trends in the United States, 1900 to 1950 (Washington: U. S. Department of Commerce, 1958); and 1960 Census of Population, Volume I, Part 1, U. S. Summary (Washington: Government Printing Office, 1964), p. 216.

[53] Projections for 1975 are based on unpublished data provided by the U. S. Bureau of Labor Statistics.

[54] For analysis of the 1940 and 1950 relationships, see Edmund deS. Brunner and Sloan Wayland, "Occupation, Labor Force Status, and Education," Journal of Educational Sociology (September, 1958), pp. 3-15.

[55] Gamma can take values from +1.00 to -1.00. It is necessary that the variables used have ordered distributions. For a discussion of gamma as a measure of association, see Leo A. Goodman and William H. Kruskal, "Measures of Association for Cross Classifications," Journal of the American Statistical Association, 49:268 (December 1954), pp. 747-754. Procedures for computing gamma are shown in Morris Zelditch, Basic Course in Sociological Statistics (New York: Holt and Co., 1959).

[56] Likewise, different index values probably would be obtained if we included farm occupations, nonwhites, and persons in other age groups. It is doubtful, however, that the degree of association would change a great deal or that the downward trend of the index values would vary significantly.

[57] For somewhat conflicting findings, however, see Duncan and Hodge, "Education and Occupational Mobility, A Regression Analysis," American Journal of Sociology (May 1963), Vol. 68, 629-644, who conclude from regression analysis of more detailed data from a labor mobility survey that "education was no less important as a determinant of occupational status in 1950 than in 1940." Our data indicate, however, that the sharpest decline was between 1950 and 1960.

[58] Arnold Katz, "Educational Attainment of Workers, 1959," Special Labor Force Reports, No. 1, Bureau of Labor Statistics, pp. 121-122 and table 7.

[59] The distributions were standardized for changes in the size of the group, and the components were computed both with attainment standardized for occupational shifts and occupational shifts standardized for attainment increases. The "interaction" or differences in the two bases of standardization were small, ranging from 2.5 to 4 per cent of the total change to be "explained."

[60] Some indirect evidence of the value of more detailed occupational categories is provided by data presented by Otis Dudley Duncan, "Occupational Components of Educational Differences in Income," Journal of the American Statistical Association, 56 (December 1961), pp. 783-792, who found that "The size of the 'between' component implies that about 57 per cent of the gross educational differences in income is accounted for by major occupation groups, and about 73 per cent by detailed occupation."

[61] Between 1950 and 1960, the average educational attainment rose for many occupations despite no obvious increase in skill requirements for the job, or in average age of employees. For example, the median number of school years completed by glaziers went up from 9.7 to 10.6 and that of railroad switchmen from 9.9 to 11.1.

[62] This conclusion appears inconsistent with the results of the study of changes in the relation of educational attainment to income reported by Miller,

"Annual and Lifetime Income in Relation to Education," American Economic Review, 50 (1960), 962-986, which indicated that the economic value of a college education (as measured by lifetime earnings) increased slightly more than the economic value of a high school education in the 1939-1959 period. This suggests that the type of occupation a person moves into may be less a determinant of his earnings now than in the past, but the education-occupation-earnings relationship is quite complex and requires further study before any conclusions of this type can be reached.

Appendix A

Evaluation of Census and Office of Education Statistics on Enrollment

The assessment of census statistics on education can be made in several ways. Estimates of response and coverage errors are provided by the special content evaluation program conducted by the Census. Comparison of census statistics with other sources of educational data, primarily the Office of Education, is also a means of evaluation. The comparison of Census and Office of Education statistics may not give us definite information about which source is "right" when there are differences, but the comparisons are valuable because both sources of data are widely used and an understanding of their similarities and differences is important.

The 1960 Census evaluation program compared responses supplied in the census with a later reinterview of a sample of the population conducted by skilled interviewers, who probed more completely, and presumably obtained better and more accurate answers. The details of this program are described in U. S. Bureau of the Census, Evaluation and Research Program of the U. S. Censuses of Population and Housing 1960: Accuracy of Data on Population Characteristics as Measured by Reinterviews. Series ER60, No. 4, Washington, 1964. See also Background Procedures and Forms, ER60, No. 1, Washington, 1963. This analysis indicates that about 8 percent of the population 5-34 did not report their enrollment status; of those who did about 2 percent reported a higher grade in the census than the resurvey, and about .6 percent reported a lower grade, for a net overreporting of 1.4 percent. Enrollment status was estimated and allocated for non-respondents on the basis of other characteristics.

Comparisons between Census enrollment statistics by grade and U.S. Office of Education grade enrollment statistics can be made for 1940, 1950, and 1960 (see Table A.1). In 1940, the census asked only a question on highest grade of school completed. The notes to the 1940 Census (Volume IV, Characteristics by Age, Part 1, U. S. Summary) state "in the tables for those attending school, persons may be assumed to have been attending the grade above the one given as completed." This assumption was a poor one, since many people reported the grade in which they were enrolled, on the assumption that they would complete the grade.

The grade distribution of enrollment using census figures has a definite upward bias, and the median grade enrollment 6.64 is about two-thirds of a year higher than the O.E. median grade enrollment 6.0. Inspection of the grade distribution shows that the greatest problem occurs at grade one, where the Office of Education reports about twice as many pupils as the Census.

In 1950 and 1960 the question on enrollment was followed by one on highest grade attended. This set of questions produced responses that were much more like the Office of Education data. Median year in which enrolled differed by only .2 of a year, with the O.E. data being lower than the Census in 1950 as in 1940. The two grade distributions were quite similar in 1950, with the O.E.

Table A.1

Comparison of Grade Distributions of Census and Office of Education Enrollment, 1940, 1950, and 1960

	1940		1950		1960	
	Census	Office of Education	Census	Office of Education	Census	Office of Education
Numbers in thousands	22,203	27,323	2[illegible],912	27,321	38,683	39,112
Total	100.0	100.0	100.0	100.0	100.0	100.0
1	5.8	12.3	11.7	13.0	10.5	11.1
2	10.3	9.5	10.9	11.0	10.2	10.1
3	9.3	9.5	10.1	10.0	9.3	9.9
4	9.4	9.5	9.4	9.5	9.2	9.3
5	9.4	9.2	8.8	9.1	9.1	9.1
6	9.2	8.9	8.6	8.7	9.0	9.0
7	9.1	8.6	8.1	8.1	9.1	9.3
8	8.7	6.9	7.8	7.2	8.0	8.0
9	7.9	7.9	6.7	7.1	6.8	6.8
10	8.0	6.9	6.3	6.2	6.4	6.4
11	6.6	5.8	5.3	5.3	6.0	5.9
12	6.4	5.0	6.2	4.6	5.9	5.1
Median Grade	6.64	6.0	5.39	5.70	5.14	5.06

being significantly higher only at grade one, and significantly lower only at grade 12. This may be additional evidence of overstatement of year enrolled, which would tend to cumulate at terminal grades.

In 1960 the two grade distributions were even more alike. Difference in the totals were only 429 thousand (about 1%). A difference this size may be due to the different time period involved. (See below). Differences in the median grade of enrollment were less than one-tenth of a grade.

If enrolled persons whose grade is unknown are included, census enrollment totals in 1950 are only about one-half million, or 2 per cent lower than Office of Education. This small difference is surprising, since the O.E. cumulative figures undoubtedly include some duplicates--if these were excluded, it would appear that the census enrollment figures would actually be higher. The report of total number enrolled in 1940 was probably affected slightly by the one-month period of reference (enrolled March 1 to April 1), as compared with the two-month period for the 1950 and 1960 Censuses and the nine-month period for the Office of Education.

In summary, if the 1940 data on attainment is used to estimate year of enrollment, by assuming enrollment in the year above the highest attained, a definite upward bias is introduced. A reasonable estimate of this bias would be about one-half year, (approximately the difference between overreporting in 1940 and 1950 when compared against the Office of Education standard). If this estimate is accurate, it would mean that at least as many people overreported their educational attainment in 1940 as reported it correctly, and if we make some allowance for underreporting, it seems likely that more people enrolled in school were reported as being ahead of their true progress than were reported accurately.

Since the error appears to be so large, and since there is no good way to estimate its magnitude accurately, it does not appear possible to make accurate comparisons between 1940 and 1950 in amount of grade retardation.

There was further reduction in the difference between Office of Education and Census statistics in 1960. Part of the reduction may be due to the allocation procedures used in the 1960 Census, so that persons with unknown grade had a grade allocated to them. The Office of Education grade report provides information on unduplicated enrollment which should reflect the maximum enrollment during the year. This usually occurs in the fall. For example, the total Office of Education enrollment in grades 1-12 in 1959-60 was 39.1 million. The Census 1959 fall enrollment sample survey (taken in October) indicated 39.0 million, and the regular Census in April of 1960 indicated 38.7 million. Difference between the Office of Education series and census fall enrollment series is less than .3 of one percent, and difference between Office of Education and Census statistics is only 1.1 percent. Considering the differences in time period, differences in methods of data collection and range of error associated with each series, the two are in very close agreement.

These comparisons suggest that current enrollment statistics collected by the Census and by the Office of Education do not have substantial coverage errors (unless these are compensating) nor do the Census statistics on year enrolled contain a bias in overreporting large enough to affect the utility of the statistics for most purposes.

It is also possible to compare census and Office of Education reports of enrollment in private schools for 1960--the first time a question on private school enrollment was included in the census. As shown in Table A.2, there is more difference between the Census Bureau and the Office of Education in private school enrollment than in public school enrollment. Part of the difference may be confusion on the part of the respondent to the Census about whether a school was public or private, and part of it may reflect the greater difficulty the Office of Education has in getting private schools to report on their enrollment.

Comparisons of College Enrollment

Comparisons of the census statistics with those of the Office of Education at the college level are affected by the difference in time of reporting. Office of Education fall enrollment statistics are quite similar to those collected by the Census in its Current Population Survey (Table A.3). The Current Population Survey of the Census estimated college enrollment of 3,340,000 in the fall of 1959, the decennial Census figures for April, 1960, were 2,935,000--about 13 percent lower.

The Census made a special check of the enumeration of college students by comparing census enumeration forms with lists of enrolled students obtained from the colleges they were attending. College records were checked against census records both where he was living (where the student was supposed to be counted) and at his parents home (where he might have been counted). This study produced several estimates of college students missed, the most reasonable one indicated a net undercount of 2.4 percent, made up of 7.4 percent of the students missed, and 5.0 percent erroneously included. Of those counted, about 95 percent were counted at the proper residence location and the remainder were counted somewhere else.

As a check on the 1960 Census enrollment data, a special effort was made by the authors to collect special college institutional data in a form that would be comparable in definition and time of collection with data collected by the census.

A sample of four states was chosen by the authors, in various parts of the country, and a special questionnaire was sent to all of the institutions in the state listed in the Office of Education Educational Directory in the spring of 1960. A response was obtained from every college except one, enrollment in that small college was estimated from the Office of Education data. A person in each state assisted with the collection of data.[1]

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[1] The persons in each state who assisted in data collection had many contacts with all of higher education in the state, and were all in responsible positions in their states, and were largely responsible for the excellent response obtained. The persons were:

Florida, Dr. Myron Blee, Director of Research, State Board of Control for Higher Education
New Mexico, Dr. Donald Moyer, Director, Board of Educational Finance
Rhode Island, Mr. Edward Hallenback, University of Rhode Island
Wisconsin, Dr. L. J. Lins, University of Wisconsin
(Positions are those held at the time of the survey)

Table A.2

Comparison of Private School Enrollment Reported by Office of Education and Census, 1960

Grade Level	Census	Office of Education	Census as a Percent of Office of Education
K-8	4,472	4,640	96.4
9-12	1,080	1,035	104.3
K-12	5,552	5,675	97.8

Table A.3

Comparison of Fall College Enrollment as Reported by the Census Current Population Survey and Office of Education, 1959-63

Year	Census Bureau	U. S. Office of Education	Ratio
1963	4,336	4,386	1.011
1962	4,208	4,175	.992
1961	3,731	3,861	1.035
1960	3,570	3,583	1.004
1959	3,340	3,365	1.007

The four states were chosen because it was felt that a complete response could be obtained in each, they do not constitute a sample of the U.S.; but for examination of the kind of errors that may be present in the Census, they provide useful information.

The results indicate a fairly close agreement between the institutional reports and the Census enrollment figures with the latter being from four to ten percent lower in the four states. (See Table A.4). One thing that was expected, overreporting of year in which enrolled, appears to be minor in nature. The institutions reported a slightly larger percent of freshmen and sophomores and a slightly smaller percent of juniors and seniors than the Census did, in three of the four states, but the difference is minor. (See Table A.5). If the institutions were forced to allocate special students to grade levels, the discrepancy might disappear or be reversed. Difference between institutional reports and census figures is between two and five percent at the undergraduate level; at the graduate level there appears to be a serious undercount by the census in three of the four states, especially of women.

Probably the explanation for the very large difference in reporting the graduate enrollment of women is to be found in the parttime enrollment of many school teachers. Since most school teachers are women, and many enroll for parttime graduate work, and since many of these part-time students were women over 35, they would be edited out of the enrolled category in the Census. Self-enumeration may also account for some of this difference, since part-time enrollment is easiest to overlook.

It is hard to explain on this basis why Wisconsin is not similar to the other states. Errors in institutional reporting (so that special graduate students got reported as special undergraduates for example) may be partly responsible. Only 17 percent of the graduate students reported in the institutional reports in Wisconsin were women, in the other three states the percent of women ranged from 25 to nearly 40.

On the basis of this comparison, it appears that most of the difference in reported totals may be explicable by the Census omission of persons over 35 from their enrollment figures.

The college enrollment statistics may be compared further according to whether enrollment was in a public or private college, as in Table A.6. This information was collected in a decennial census for the first time in 1960 but has been collected over a period of years in the Current Population Surveys and in the O. E. fall surveys. The percentage of college students in public colleges consistently runs somewhat higher in the CPS than in the O.E. survey. Because of this difference, a checkwas made on the CPS reports in 1958. Respondents were asked in the usual way whether a college enrollee was in a public or private college and, at another point in the interview, were also asked for the name of the college being attended. Classification of the college names was made by using the Office of Education college directory and comparisons were made on a case-by-case basis with the CPS report. The results are shown in Table A.7. If, as seems proper, one accepts the O.E. classification, the CPS reports which were in error were largely those in which a private college was reported as public. Since many private colleges have place names (such as

Table A.4

Four State Comparison of College Reports of Spring Term Enrollment and Census Reports on College Enrollment, 1960

State and Category	Institutional Reports as a Percent of Census Figures		
	Total	Male	Female
Total enrollment			
Florida	107.0	104.5	111.3
New Mexico	110.4	110.1	110.9
Rhode Island	105.5	103.6	108.4
Wisconsin	103.8	103.1	104.9
Total undergraduate enrollment			
Florida	104.6	104.0	105.6
New Mexico	105.4	107.1	101.6
Rhode Island	101.6	103.0	98.7
Wisconsin	104.2	104.0	104.4
Total 5th year and graduate enrollment			
Florida	129.8	107.7	225.8
New Mexico	145.1	127.5	237.5
Rhode Island	143.6	108.3	281.6
Wisconsin	100.9	98.5	114.4

Source: Special Survey of Institutions in the 4 States listed.

Table A.5

Comparison of Institutional Reports and Census Reports of Undergraduate College Enrollment, 1960

State and Source of Data	Percent of Reported Enrollments That Are: Freshmen	Sophomores	Juniors	Seniors	Total
Florida					
Institutional Report	41	28	16	15	100
Census Report	36	28	17	19	100
New Mexico					
Institutional Report	36	27	19	18	100
Census Report	35	26	18	21	100
Rhode Island					
Institutional Report	31	29	19	21	100
Census Report	33	28	19	20	100
Wisconsin					
Institutional Report	37	26	19	18	100
Census Report	35	27	20	18	100

Table A.6

Public and Private College Enrollment in the United States: 1960 Census, 1959 Current Population Survey, and 1959-60 Office of Education Biennial Survey

Type of enrollment	1960 Census Number	1960 Census Percent distribution	1959-CPS Number	1959-CPS Percent distribution	1959-60 OE Survey Number	1959-60 OE Survey Percent distribution
Total	2,935,446	100.0	3,340,000	100.0	3,402,297	100.0
Public	1,727,789	58.9	2,120,000	63.5	2,002,868	58.9
Private	1,207,657	41.1	1,220,000	36.5	1,399,429	41.1

Table A.7

Comparison of CPS Entries on Public or Private College Enrollment with Office of Education Classification of Colleges Attended by CPS Respondents: Unweighted CPS Sample, October 1958

Category	Number	Percent
Number of College students in sample	2,062	-
Name of College not given or incomplete	143	-
Total number of cases with college reported	1,919	100.0
Number with same classification in CPS and OE	1,778	92.7
Number with different classification in CPS and OE	141	7.3
OE-Public; CPS-Private	26	1.4
OE-Private; CPS-Public	115	6.0
Net Number with different classification	89	4.6

the University of Dayton), this particular type of error is understandable. Some further instructions to CPS interviewers in 1959 on this matter did not result in improved reporting, however, as can be seen in table A.6 but the 1960 decennial census figures matched exactly, percentagewise, with the O.E. figures. The greater census accuracy in reporting this item probably can be explained because college students were counted in the census where they attended school and they tended to report for themselves, whereas in the CPS unmarried college students are reported by their parents whose knowledge of the type of control of the college may have been incomplete.

It is also possible to compare census and Office of Education statistics on educational attainment. There are few direct comparisons between Census Bureau and Office of Education data of this type which can be made but it is possible to make some indirect comparisons. For instance, according to the March 1959 Current Population Survey, about 6.9 million persons 25 to 29 years old were high school graduates (that is, had completed four years of high school or some college); if one sums the number of high school graduates each year reported by the Office of Education for a five-year period corresponding to the time at which this age group should have completed high school, about 6.0 million persons are recorded as high school graduates. The most obvious reason for this difference is the probable net overreporting of persons completing high school, according to the CPS; however, it is difficult to match cohorts in the two sets of data, and some persons receive high school equivalent certificates at a late age. It is significant to note that in a special study conducted by the Census Bureau, in which information was gathered about youths, reported as high school seniors in the October 1959 CPS, as to their high school status in the fall of 1960, an estimated 1,803,000 were reported as high school graduates; and this number agreed exactly with the independent estimate made by the Office of Education based on their survey.

When the number of college graduates (that is, persons who had completed four or more years of college, according to the CPS) for the same 25-to-29 year age group is compared with the number of college degrees (bachelors and first professional level, according to O.E.) for the appropriate time period, the CPS figure is found to be slightly lower than the O.E. figure (about 1.2 vs. 1.4 million). Quite likely, some net overreporting of college graduates in the CPS was more than compensated for by the fact that the O.E. data included many persons (maybe up to 10 percent of the total with bachelor or first professional degrees) who received a professional degree after having received a bachelor's degree in the same five-year period. The difficulty of exactly matching cohorts prevents any very precise comparisons from being made.